



ASHEVILLE-BUNCOMBE
TECHNICAL COLLEGE
1984-1985

This catalog should not be considered a contract between Asheville-Buncombe Technical College and any prospective student. Curriculum offerings may be altered to meet the needs of individual departments and a minimum enrollment is required for offering or continuing a class. All charges for tuition and fees are subject to change as required by the Board of Trustees.

An Equal Opportunity Educational Institution

COVER: Students Tina Davis and Robert Haynes enjoy the beautiful Fall colors on the campus of A-B Tech. Photos by Kate H. Utter.

ASHEVILLE-BUNCOMBE

TECHNICAL COLLEGE

340 Victoria Road
Asheville, N.C. 28801

Phone: (704) 254-1921

Recognized and Approved by
North Carolina State Board of Education
North Carolina Department of Community Colleges
North Carolina Office of Emergency Medical Services
Division of Vocational Rehabilitation
and for Veterans Participation

Member of
American Association of Community and Junior Colleges
North Carolina Department of Community Colleges
Student Services Personnel Association
N.C.A.C.C. Instructional Administrators
Association of Community College Business Officials
American Library Association
Learning Resources Association

Accredited By
North Carolina Board of Nursing
National Accrediting Agency for Clinical Laboratory Sciences
American Medical Association
American Dental Association
Southern Association of Colleges and Schools

Catalog of Courses

Day and Evening School

Volume 22
1984-1985

1984-1985

SEPTEMBER

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COLLEGE CALENDAR 1984-85

FALL QUARTER

Last day for applications until after scheduled registration	August 29
Registration (9:00 A.M.-12:30 P.M. & 1:30 P.M.-3:00 P.M.)	September 4
Freshman orientation & Classes begin	September 5
Last day for registration	September 11
Last class drop day	September 14
Last day of examinations	November 20
Total class days	55
Early registration for Winter Quarter	T.B.A.
Optional days	November 21
Holidays	
Thanksgiving	November 22, 23

WINTER QUARTER

Last day for applications until after scheduled registration	November 20
Registration (9:00 A.M.-12:30 P.M. & 1:30 P.M.-3:00 P.M.)	November 26
Classes begin	November 27
Last day for registration	December 3
Last class drop day	December 6
Last day of examinations	February 22
Total class days	55
Early registration for Spring Quarter	T.B.A.
*Optional days	February 25, 26, 27, 28, March 1
Holidays	
Christmas (8)	December 20-31
New Year's	January 1

SPRING QUARTER

Last day for applications until after scheduled registration	February 28
Registration (9:00 A.M.-12:30 P.M. & 1:30 P.M.-3:00 P.M.)	March 4
Classes begin	March 5
Last day for registration	March 11
Last class drop day	March 14
Last day of examinations	May 22
Total class days	55
Early registration for Summer Quarter	T.B.A.
Optional days	May 23, 24, 27, 28, 29, 30, 31
Holidays	
Good Friday	April 5
Easter Monday	April 8
Graduation confirmation week	April 22-26

SUMMER QUARTER

Last day for applications until after scheduled registration	May 30
Registration (9:00 A.M.-12:30 P.M. & 1:30 P.M.-3:00 P.M.)	June 3
Classes begin	June 4
Last day for registration	June 10
Last class drop day	June 13
Last day of examinations	August 20
Total class days	55
Graduation	August 23
Optional days	August 21, 22, 26, 27, 28, 29, 30
Holidays	
Independence Day	July 4
Labor Day	September 2
Graduation confirmation week	July 22-26

Twelve months teaching faculty may select any 14 optional days as vacation; nine months teaching faculty any 10.5 days. Remaining optional days are faculty work days.

*Up to four days lost due to inclement weather may be made up at this time.

EVENING SCHOOL CALENDAR 1984-85

FALL QUARTER

Last day for applications until after scheduled registration	August 29
Registration (6:15 P.M.)	September 4
Fees may be Paid (6:00 P.M.-8:00 P.M.)	August 13-16, 27-29 & September 4
Classes Begin	September 5
Last night for Registration	September 11
Last night to Drop Class	September 14
Last night of Classes	November 20
Total Class Nights	44
Holidays	
Thanksgiving	November 21, 22, 23

WINTER QUARTER

Last day for applications until after scheduled registration	November 20
Registration (6:15 P.M.)	November 26
Fees may be Paid (6:00 P.M.-8:00 P.M.)	November 12-15
Classes Begin	November 27
Last night for Registration	December 3
Last night to Drop Class	December 6
Last night of Classes	February 21
Total Class Nights	44
*Inclement Weather Make-up Nights	February 25-28
Holidays	
Christmas & New Year's	December 19-January 1

SPRING QUARTER

Last day for applications until after scheduled registration	February 28
Registration (6:15 P.M.)	March 4
Fees may be Paid (6:00 P.M.-8:00 P.M.)	February 11-14
Classes Begin	March 5
Last night for Registration	March 11
Last night to Drop Class	March 14
Last night of Classes	May 21
Total Class Nights	44
Graduation Confirmation Week	April 22-26
Holidays	
Easter Monday	April 8

SUMMER QUARTER

Last day for applications until after scheduled registration	May 30
Registration (6:15 P.M.)	June 3
Fees may be Paid (6:00 P.M.-8:00 P.M.)	May 13-16
Classes Begin	June 4
Last night for Registration	June 10
Last night to Drop Class	June 13
Last night of Classes	August 20
Total Class Nights	44
Graduation Confirmation Week	July 22-26
Graduation	August 23
Holidays	
Independence Day	July 4
Fall Quarter break and Labor Day	August 21-September 2

*Nights lost because of inclement weather may be made up during this period.

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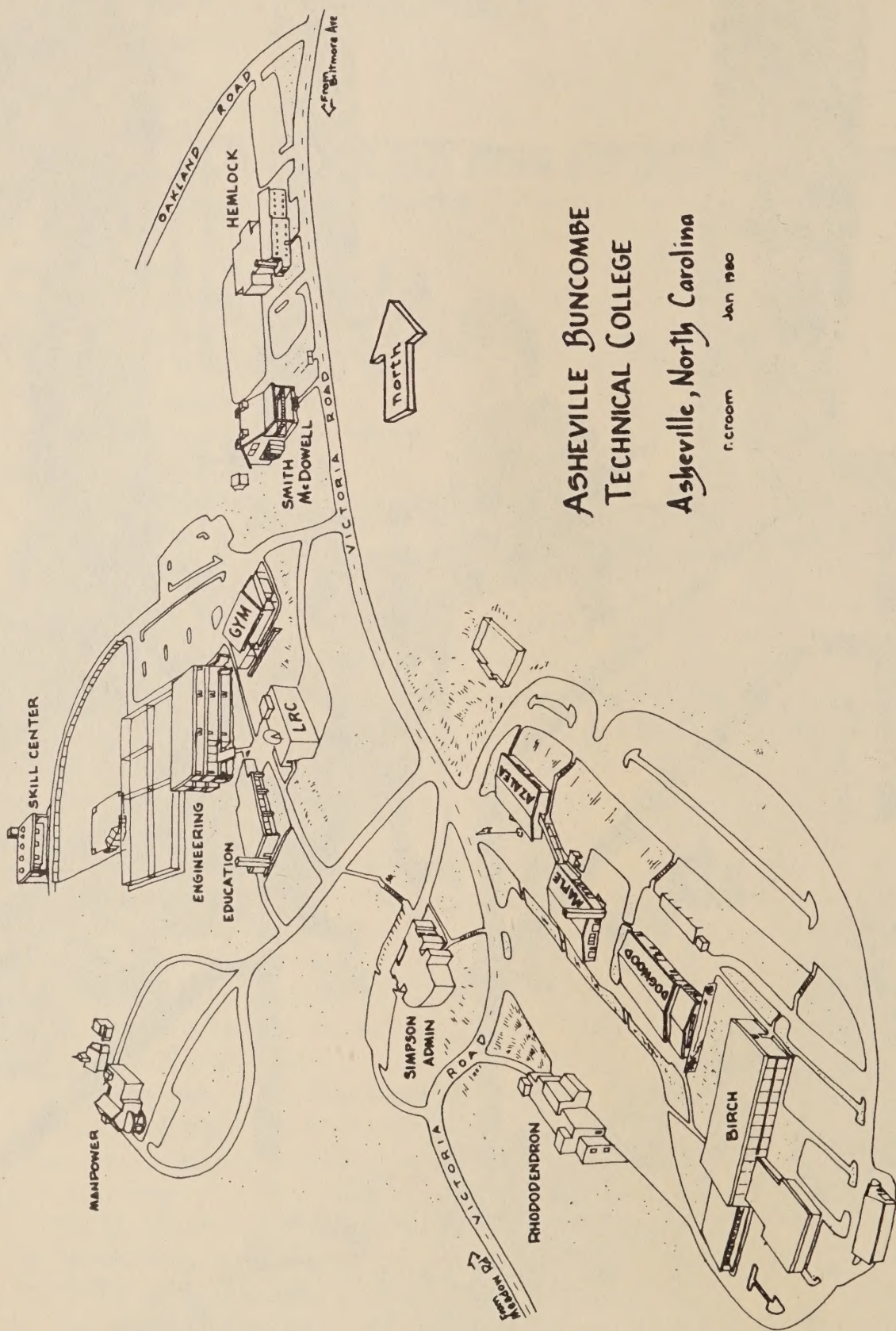
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*Curriculums offered in both day and evening hours. Enrollment will determine offering or continuing a curriculum.

**Offered evening hours only.





ASHEVILLE BUNCOMBE TECHNICAL COLLEGE Asheville, North Carolina

r. croom Jan 1980

BUILDINGS LEGEND

Thomas W. Simpson Administrative Bldg.

President
Offices of Instruction
Business Office
Elevated Lecture Room
Financial Aid

Azalea Bldg.

Bookstore
Job Developer
Student Services
Snack Shop
Veterans Representative

Birch Bldg.

Business Administration
Cafeteria
Culinary Science
Data Processing
English & Social Studies
Hotel & Restaurant Mgt.
Office Education

Dogwood Bldg.

Air Conditioning, Heating
and Refrigeration
Building Construction
Diesel Engines
Physics Department
Welding

Educational Bldg.

General Education
Guided Studies
Learning Laboratory

Engineering Bldg.

Chemical Technology
Civil Technology
Drafting & Design Technology
Electronics Technology
Mechanical Technology

Gymnasium

Athletics

Hemlock Bldg.

Continuing Education
Criminal Justice
Emergency Medical Science

Learning Resources Center

Audio-Visuals
Library

Manpower Bldg.

Continuing Education Classes
Human Resources Programs

Maple Bldg.

Automobile Mechanics
Machine Shop
Tool & Die Making

Rhododendron Bldg.

Associate Degree Nursing
Dental Assisting
Dental Hygiene
Emergency Medical Services
Medical Laboratory Technology
Practical Nurse Education
Radiologic Technology

Skills Center

Continuing Education Classes
New Industry Training

HISTORY

The 1963 General Assembly passed a law placing industrial education centers under the direction of the newly created Department of Community Colleges and governed by a local board of trustees. Soon after its establishment, the Asheville board of trustees requested that the local industrial education center be converted to a technical institute with power to award Associate in Applied Science degrees. This request was approved by the Board of Education in January, 1964, and the name of the center was changed to Asheville-Buncombe Technical Institute.

The first major expansion of facilities occurred in 1963 when the County obtained a \$200,000 loan for a third building. A fourth building, costing \$712,000 and utilizing state and federal monies, was added in 1966. In addition to classrooms and a library, this unique facility houses a motel and full equipped kitchens and a cafeteria for use in the hospitality education curriculums. A 1.4 million dollar building program was completed in 1971 which provided a multistory facility to house allied health instruction and an administration building. In 1974 the purchase of seventy-eight additional acres and three buildings increased the campus to include ten buildings and one hundred six acres of land. Recent construction efforts have resulted in the completion of a modern Learning Resources Center in 1977. In 1979 the Skill Center, which houses skill programs for new or expanding industry, was completed. In August of 1979 the board of trustees approved changing the name of the institute to Asheville-Buncombe Technical College. With the purchase of an additional seven and one-half acres and one existing building, space was provided for new Criminal Justice and Emergency Medical Services curriculums. The Engineering Technology Building, started in 1979, was completed during the spring quarter of 1980 and was occupied during the summer quarter.

In the fall of 1981, a new curriculum in Manufacturing Resources Planning was implemented.

With approval from the Board of Trustees, the College faculty and staff started work on the self-study for reaffirmation in the Southern Association of Schools and Colleges. The College was originally accredited by SACS in 1973.

LOCATION

The Asheville-Buncombe Technical College is located in modern buildings on a one hundred fourteen acre tract of land off Victoria Road. With the completion of current construction projects, the College will have over 283,000 square feet of floor space devoted to its many trade and technical programs. Included in the buildings are well-lighted classrooms, large laboratories, shops equipped with the most recent test and production type equipment and a gymnasium.

STATEMENT OF PURPOSE

The fundamental purpose of Asheville-Buncombe Technical College is to prepare students through practical education to meet the demands of changing technology and develop responsible attitudes and understanding necessary to function in a modern society.

Programs are designed to provide profitable skills for the untrained, augment the knowledge of those already trained, and offer the opportunity for retraining. Other programs enable adults who do not have primary, elementary, or secondary educational achievement to attain these levels. Interwoven is a belief in individual worth and a respect for individual differences.

In summary, Asheville-Buncombe Technical College shall serve as the occupational education link between the individual need and the employment opportunities.

PHILOSOPHY

It is the philosophy of Asheville-Buncombe Technical College that the cumulative efforts of the College program must serve the educational needs of the individual within the defined purpose and scope of the College program. Essential to this belief are the following.:

We believe that the College and the programs exist to serve the students and that all coordinated efforts should be devoted to meeting their needs. Our commitment includes recognizing the individual worth of each student, accepting him at the level we find him, and assisting him in every way to attain his goals and objectives.

The College subscribes to the belief that in the decision-making process it is in keeping with the principles of democracy to involve those who are affected by the decision. Consequently, the students, faculty, staff, and the community must be considered in the formulation of the College policies and practices and are invited to participate.

In order to assure all an equal opportunity to learn and improve skills, to develop social abilities and responsible attitudes, our doors will never be closed to anyone of suitable age who can profit from our programs. We must take the people where they are and carry them as far as they can go within purpose and capabilities of the College. Limitations placed on the offerings and programs by facilities, staff, and requirements of certifying agencies should be the only factors restricting the total fulfillment of this phase of the College philosophy. The development of communicative skills and the effective creative use of leisure time will be reflected in College programs.

Inherently involved in the concept of the Open Door Policy and in the formulation of realistic goals are the processes of Guidance and Counseling. The College believes that adequate guidance and counseling services should be readily available to every applicant and should continue to be available to all students throughout their educational careers. We believe this service can best be provided by a coordinated effort of the personnel of student services and of faculty members. College personnel must realize that our educational programs and facilities may not meet the needs of every applicant—that is, we cannot be all things to all people. In such cases, College personnel should be capable of assisting the applicant in the selection of an appropriate social or educational agency designed to meet his particular needs.

The College is committed to the maximum utilization of its resources and to the greatest possible efficiency in their use. Consequently, many curriculums and many continuing education courses are offered during the evening hours, or by special arrangement, as well as during the day.

Asheville-Buncombe Technical College serves as an essential member of the regional economic development team. The College is primarily concerned with "Manpower" for economic development and strives to keep curriculums and courses in the mainstream of community needs.

The program of instruction should be constantly responsive to the needs of the students as well as present and prospective employers. It should thus be sufficiently flexible, both in curriculum and facilities to meet the needs under changing conditions.

The College believes that self-evaluation and institutional research provide the most effective base for responsible decision-making.

In our commitment to education, Asheville-Buncombe Technical College will not limit itself to the development of occupational skills, but will also be dedicated to the development of the total individual.

Periodic reviews of our College philosophy are essential in order to provide an education that is flexible, progressive, and sensitive to the changing needs and desires of our clientele.

DIVISIONAL OBJECTIVES

Engineering Technology: The Engineering Technology Division provides a practical degree-granting education involving scientific and mathematical theory with specialized training in some specific branch of engineering technology to enable the graduate to apply established engineering principles in his field.

Business Education: The objective of the Business Education Division is to provide practical dynamic college-level business training with emphasis on the development of desirable professional attitudes.

Allied Health: The Health Sciences provide qualified students with opportunities at the post-secondary level to acquire knowledge, skills, and attitudes which will enable them to become safe and effective members of the health care team.

Hospitality Education: The Hospitality Education Division provides professionally oriented, post-secondary and college level training in various selected facets of the hospitality industry. These curricula are designed to reflect the everchanging skills and attitudinal demands and needs of the industry.

Vocational-Industrial Education: Vocational-Industrial Educational Curricula are diploma or technical diploma granting programs taught at the post-secondary level. They are designed to give the student practical education and applied training in the manipulative skills peculiar to a specific trade.

Continuing Education: Continuing Education will provide vocational education opportunities for the unemployed, upgrading courses for those already employed, adult basic education for those desiring a higher educational level, and certain avocational courses for individual enrichment.

General Education: The General Education Division contributes to the growth of students for productive involvement and participation in a technological society by providing on the post-secondary level essential communicative and quantitative skills as well as an understanding of human relations and the human environment. This division also provides a degree granting

program in Criminal Justice-Law Enforcement Technology with special emphasis in the social sciences and the necessary technical skills needed in law enforcement and related fields.

Learning Resources Center: The Objectives of the Learning Resources Center (LRC) are to provide instruction and support services through a variety of print and non-print materials, equipment, learning activities, and production capabilities. These services are designed to assist faculty, students, and community patrons through three major areas, or components: The Library, Learning Laboratory, and Audio-Visual Services.

EVENING CURRICULAR PROGRAMS

Most of the curricular classes offered in the day are offered on a part-time basis in the evening. Classes meet on campus Monday through Thursday evenings, starting at 6:30 P.M. Individually selected classes may be taken by “Special Schedule” or “Unclassified” students, providing the prerequisites have been met and space is available.

Evening curricular classes qualify students for the same degree or diploma as full-time day classes. Students who enroll in these programs generally work at full-time jobs during the day.

LEARNING RESOURCES CENTER

The Learning Resources Center includes: THE LIBRARY, LEARNING LABORATORY and AUDIO-VISUAL SERVICES. Together, they provide information; guidance in locating and utilizing a wide range of resource materials; provide a variety of equipment to supplement classroom and laboratory/shop experiences; assist with independent study and research.

THE LIBRARY: Under the direction of the Librarian, the Library makes available all of the LRC’s collection of resource materials, both print and non-print. The major responsibility of the Library is to provide information services and assist the user with utilization of the collection. In addition, the Library provides a very attractive, well equipped facility for both scholarly and recreational reading and study.

HOURS: Monday-Thursday 8:00 a.m.-10:00 p.m.

Friday 8:00 a.m.- 4:30 p.m.

Closed weekends

AUDIO-VISUAL SERVICES: Audio-Visual services are provided by the Coordinator, Audio-Visual Services and include production, materials, and equipment to support the instructional program and related activities. The LRC maintains an inventory of Audio-Visual equipment for loan to faculty and other authorized patrons.

THE LEARNING LABORATORY: The Learning Laboratory is an instructional component of the Learning Resources Center. It serves as the central focal point of instruction by providing a learning environment in which the student can be free to explore interests, with a learning pace and manner specifically tailored to individual needs.

The purpose of the Learning Laboratory is to assist an individual toward reaching educational or vocational objectives. Its services are designed to enrich college instructional programs and to upgrade academic skills. Special emphasis is placed on helping the handicapped person.

The Learning Laboratory is a GED Testing Center. The GED Test is administered once a week by appointment.

The Learning Laboratory is designed to help students:

1. increase their level of learning before entering a technical institute or college.
2. prepare for SAT, College admission exams, and CLEP.
3. prepare for the GED Test.
4. through the GED and Developmental Studies Programs for Veterans.
5. who need to fulfill entrance requirements for Associate Degree programs.
6. who need high school credit in algebra, geometry and biology as a prerequisite for colleges and universities.
7. who wish to re-enter the business world or to change vocations.
8. pursue a high school diploma according to agreements between the college and public schools.

A student may begin in the Learning Laboratory at any time and proceed at his own learning rate. An instructor is always available to give assistance when needed and to determine if the student is making satisfactory progress.

Hours: Monday-Thursday	8:00 a.m.-9:15 p.m.
Friday	8:00 a.m.-4:00 p.m.

There is no charge for study but there is a \$5.00 fee to take the GED Test.

GUIDED STUDIES

This instructional component of the general education division provides students and prospective students with special counseling, assessment, and tutoring in the basic subjects of Math, English and Reading. Individual and group instruction, counseling and seminars are available in Study Skills, Career Development, and Human Development. The major objective of this program is to help individuals experience success at levels which will lead to successful achievement in ABTC's curriculum programs.

Guided Studies personnel are skilled in assessment techniques in the areas of intelligence, academic achievement, personality development, vocational interests, and aptitudes. These services are available for individuals and groups already enrolled in, or planning to enroll in curriculum programs at Asheville-Buncombe Technical College.

Current schedules for Guided Studies personnel may be obtained by contacting any member of the General Education Division.

HIGH SCHOOL EQUIVALENCY

An adult who has not completed high school may take a series of General Education Development (GED) tests. Upon attaining a passing score of 225 points with no single test score below 35, a High School Equivalency Certifi-

cate will be awarded. This certificate is generally accepted on a basis equal to a high school diploma for employment, promotion, or further education.

The G.E.D. tests cover five broad areas: Writing Skills, Mathematics, Social Studies, Science, and Reading Skills. The test is administered in the Learning Lab at the College.

The following requirements must be met before taking the G.E.D. tests:

1. Minimum age: 18; 16 and 17 year olds may take the G.E.D. test with special permission.
2. Residence: current North Carolina resident.
3. Make application for tests on official blanks that are available in the Learning Lab.
4. Cost: There is a \$5.00 fee to take the G.E.D. test.

An appointment must be made through the Learning Lab.

DIVISION OF CONTINUING EDUCATION

The concept of lifelong learning is implemented through continuing education classes at Asheville-Buncombe Technical College. These classes carry no credit toward a degree or diploma. They vary in length and are held wherever there is available space and a sufficient number of students. Individuals sixteen and seventeen years old may register for continuing education classes provided they have special permission and do not displace any interested adult.

Usually, the only cost for these courses is a nominal registration fee. In some, there is a charge for textbooks or materials used in the course. North Carolina residents 65 years of age and older are exempt from the registration fee.

Classes are divided into four general areas:

ACADEMIC: Languages, economics, history, sociology, psychology, etc.

AVOCATIONAL: Ceramics, general crafts, photography, etc.

PRACTICAL SKILLS: Sewing, cooking, floral design, mechanics, etc.

OCCUPATIONAL: Business courses, food service, law enforcement, health occupations, etc.

ADULT BASIC EDUCATION AND ADULT HIGH SCHOOL

The Adult Basic Education (ABE) program is designed for adults who are functioning at or below the eighth-grade educational level. The program assists adults with the necessary skills to cope with contemporary society, to receive training for employment opportunities, and to raise their functional academic level. Free classes offer the opportunity to study basic reading and writing, English, reading comprehension, math, social studies, and science. The program can assist an adult in preparing to enter the Adult High School program which prepares individuals to take the high school equivalency (GED) exam.

Classes usually meet twice a week and a person may enroll at any time. Additional classes can be started in almost any location where there is a sufficient number of interested adults.

All materials are designed for adults with emphasis on individual needs and interests. In the Adult High School program, students may pay a nominal book fee. At all levels, instruction is closely related toward helping the student function better in today's society.

HUMAN RESOURCES DEVELOPMENT

The Human Resources Development program is located in the Manpower building on the A-B Tech. campus. Since 1973, the program has been one of several being offered under the auspices of the State Board of Education through the Department of Community Colleges with special funding by the North Carolina General Assembly.

Students who meet the enrollment guidelines for this training are given six to eight weeks of classroom instruction and supervision with a 30-hour weekly schedule. Each is given a combination of group counseling and job preparation activities with individual instruction in obtaining or improving basic functional and life coping skills. A career development staff assists the students in obtaining realistic goals of job placement or further vocational training. To meet local employment needs, intensive training in one particular skill is offered during each class cycle.

Students certified as eligible for this training under federal guidelines, may receive a needs base payment during their efforts to become self-sufficient citizens.

Priority is given to those with multiple disadvantages including:

1. Disadvantaged female heads of households
2. Veterans
3. Physically handicapped or disabled
4. Economically and educationally disadvantaged
5. Ex-offenders

Applications may be made daily at the Manpower building on campus during regular school hours.

NEW AND EXPANDING INDUSTRY TRAINING

The purpose of the Industry Services Division of the Community College System is to train a skilled production work force for a new or expanding industry. Recognizing that the recruitment and training of new employees is one of industry's most perplexing problems, North Carolina was the first state in the Southeast to establish a planned system of industrial manpower training, and A-B Tech was one of the first to offer this program.

Because it is a customized service, based on the unique requirements of a particular company, A-B Tech can provide training for any industrial job that can be defined and arranged into a logical learning sequence. The final training program design is the result of joint study, planning, and implementation by company personnel, industrial training specialists, and A-B Tech personnel.

STUDENT INFORMATION

NON-DISCRIMINATION POLICY

Asheville-Buncombe Technical College does not discriminate on the basis of sex, race, ethnic origin, age, handicap, or religion, in the educational programs or activities which it operates. The College is required by Title IX of the Education Amendment of 1972 not to discriminate on the basis of sex, and

by other Federal legislation not to discriminate on the basis of race, ethnic origin, age, handicap, or religion. The requirement not to discriminate in education programs and activities extends to employment in the College and to admission into its programs. Inquiries or complaints concerning the application of Title IX and other Federal non-discrimination legislation to Asheville-Buncombe Technical College should be referred to:

Jane G. Smith, Director of Personnel
Asheville-Buncombe Technical College
340 Victoria Road
Asheville, North Carolina 28801
Thomas W. Simpson Administration Building
Telephone: (704) 254-1921

GENERAL ADMISSION REQUIREMENTS AND PROCEDURES

Asheville-Buncombe Technical College has an "OPEN DOOR" admission policy. High school graduation or equivalent is normally required for admission to any curriculum; however, there are also programs for non-graduates 18 years of age or older. The College begins accepting applications in January and early application is advised for many programs. Admission to some curricula is competitive among qualified applicants according to established criteria.

Individually selected classes may be taken by "Special Schedule" or "Unclassified" students, providing the prerequisites have been met and space is available. Students completing 30 hours as an "unclassified" student must complete curriculum admission requirements before registering for additional courses.

Placement into a specific course of study is based upon standards which will help to assure the applicant's success in that course of study. Those who do not yet possess the background required by the course of study of their choice may be enrolled in preparatory courses designed to provide this background.

Educational background, interest, motivation, experience and aptitudes will be considered when an application is submitted to the College.

Persons wishing to enroll in a **curriculum program** at the College must complete the entire application process and meet requirements as follow:

1. Submit an application form.
2. Obtain transcripts of credits from all secondary and post-secondary schools attended. Records should show that the student is a high school graduate or has a state approved equivalent education.
3. Complete the battery of admission and placement tests administered by the College. Student suitability for admission to individual programs will be determined by scores on the tests and specific program requirements (See programs for details). Requests for test exemption by transfer or special students will be reviewed individually.
4. Have a personal interview with the student services staff and a representative of the major department.
5. Applicants should be in good health with no impairment of vision or other physical defect which would restrict ability in a particular field of work. A complete physical examination may be required.

Upon receipt of the completed application form the College will schedule a date for test administration and notify the applicant by mail.

Upon completion of the above procedure, each applicant will receive written notification of the action taken.

COUNSELING AND TESTING

Testing will be completed prior to acceptance and registration. The counselor will schedule interviews with students concerning interpretation of their test scores and will advise students concerning course selections. Additional aptitude tests may be desirable to determine individual ability. Applicants are encouraged to enroll in programs when it is believed that the student has made a sound choice and will profit from the selected program.

Students are encouraged to use the counseling services at any time. The counseling service will work at all times with individuals to keep them informed of the progress they are making. Also, many reference materials are made available to students during the program through the counseling service.

TRANSFER CREDIT

CREDIT FROM OTHER INSTITUTIONS: Asheville-Buncombe Technical College will accept credit for parallel work completed in other North Carolina Technical Institutes, Technical Colleges, or Community Colleges and institutions accredited by a regional accrediting agency. Applicants who seek admission with advanced standing should make regular application and submit transcripts of work from all other institutions. No credit will be granted for work below a "C" or the average grade given by the other institution. Credit will be for course work only without grades or quality points.

INTERNAL TRANSFER OR CREDIT: Students who drop out and return, change majors, or return from suspension will have their former A-B Tech work evaluated as follows:

1. Graduates of A-B Tech who return to the college for another program will have their former work evaluated according to the procedures for **CREDIT FROM OTHER INSTITUTIONS**.
2. Non-graduates and suspended students who return after being out of school at least three consecutive quarters will have their transcripts re-evaluated. All courses applicable to the requirements of the current program, according to the current catalog* and having passing grades will be transferred or carried forward with existing grades. For courses passed with a grade of D, THE STUDENT HAS AN OPTION OF REPEATING THE COURSE OR APPLYING IT TO THE CURRENT MAJOR. (A minimum grade of C is required in all major area courses for graduation.)
3. Non-graduates who change programs without being out of school for three consecutive quarters will have their transcript evaluated. All courses applicable to the requirements of the current program, according to the current catalog,* will be transferred or carried forward with existing grades.
4. Non-graduates returning to continue their program of study after being out of school less than three consecutive quarters will not have their transcript evaluated.
5. The initial grade point average will be determined by the courses and corresponding grade applied toward the current major.

6. Exceptional cases will be handled at the discretion of the Vice President of Instructional Services.
7. This process will be completed during the first quarter of reenrollment.

*“Current catalog” is defined as the current first year catalog if the student does not graduate with his/her class and/or returns with one-half or less of the credit hours required for graduation (64 technical, 32 vocational). If the student has more than one-half of the credit hours required, current catalog is defined as the current second year catalog.

TRANSFER CREDITS TO OTHER INSTITUTIONS: Parallel work completed at ABTC will transfer to other institutions of the North Carolina Department of Community Colleges and most four-year institutions. ABTC has formal transfer agreements with many senior institutions in Western North Carolina and beyond. The details of these agreements are available from the Dean of Evening Programs or the individual senior institution. The agreements address the transfer of credit for graduates and non-graduates who choose to continue their education in the senior school. Informal agreements for transfer of credit have been reached with many other institutions. Students are encouraged to continue their formal education after completion of their ABTC program. To request credit at other institutions, an applicant should apply for course credit in the manner established for that institution. Final approval rests with the receiving institution.

CREDIT BY EXAMINATION

Students who can provide tangible evidence of preparation to challenge a course, such as a transcript of similar college level credits, record of military study, certification or license, standardized test scores including CLEP, or written statements from employers regarding training or directly related work experience indicating that they may be proficient in a subject, may request credit by examination. A written request must be made to the proper Department Chairperson on a form obtained from the Registrar.

Proficiency examinations will be comprehensive and approved by the supervisor of the instructor administering the exam. The examination may be oral, performance, written, or a combination of these methods. To receive credit by examination, the score must be above average. The decision of the examining instructor will be final. No quality points will be awarded for credit by examination.

A student who fails a challenge exam or has been enrolled beyond the drop date in a course, may not take a challenge exam for credit in that course.

Because of specific requirements, credit for certain courses may not be received by proficiency examination. The courses which may not be challenged by examination are marked with an asterisk in the course description section of the catalog.

AUDITING COURSES

Students who wish to audit courses must register through regular registration procedures and must have approval of the department chairperson responsible for the particular course. Audit students do not receive credit but must adhere to attendance regulations. An audit intention cannot be changed

to credit course after the fifth class day nor can credit courses be changed to audit courses. Audit work cannot be used toward diploma or degree requirements. (Audit students will enter class after all curriculum students have been registered, precluding audit students from taking the place of curriculum students).

NORTH CAROLINA RESIDENCY

In order to qualify for the resident tuition rate, North Carolina law (G.S. 116-143.1) requires that “a *legal resident* must have maintained his domicile in North Carolina for at least *the twelve months immediately prior* to his classification as a resident for tuition purposes.”

One must also have accomplished many of the things normally done by one who intends to reside in a state permanently. Examples of these actions are: employment, paying taxes, having a current NC driver’s license, voting in the state, belonging to churches, clubs or other organizations. Anyone having a question regarding resident status should contact Student Services.

TUITION

ADVANCE REGISTRATION \$ 15.00

Required of all full-time day students and full curriculum evening students as a condition of acceptance and enrollment. (This fee is paid at the time of acceptance and is credited to the fall quarter tuition payment.)

Full-time students per quarter \$ 51.00

Non-Resident of N.C. \$255.00
(12 or more credit hours)

Part-time per credit hour per quarter \$ 4.25

Non-Resident of N.C. \$ 21.25
(less than 12 credit hours)

LATE REGISTRATION FEE \$ 5.00

North Carolina residents 65 years of age and older are exempt from the payment of curriculum tuition and extension registration fees.

STUDENT ACTIVITY FEE

A \$16.00 activity fee is collected from all full-time day students during the Fall Quarter registration which entitles the student to participate in all activities during the school year. Full-time day students enrolling for less than the full school year will pay on the following basis:

Fall Quarter \$6.00

Winter Quarter 5.00

Spring Quarter 5.00

Evening and special schedule students may participate in activities by paying an admission fee established for each event.

STUDENT INSURANCE

Certain risks are inherent in any work involving regular contact with mechanical and electrical equipment. While stringent precautions will be taken to insure safety, it is felt to be in the interest of all students to provide some measure of insurance protection.

A group policy, providing the desired insurance protection, will be maintained in effect by the College and all students will be **REQUIRED** to subscribe to such coverage. The cost of accident insurance to the student will be approximately \$3.50 per year.

STUDENT FINANCIAL AID

The purpose of the financial aid program at Asheville-Buncombe Technical College (ABTC) is designed primarily to provide assistance to students who, without such aid, would be unable to attend the College. The program is committed to the philosophy that no eligible student should be denied access to a higher education because of a lack of financial resources.

An application for financial aid will gain consideration for grants-in-aid, loans, scholarships and student employment opportunities. In general, financial aid is awarded to students on the basis of need, academic potential, and future promise. In determining the student's need, it is assumed the student will help himself through summer jobs and part-time work while attending school, that the family will provide aid commensurate with its income and resources and that the student will avail himself to any other financial assistance which is available.

Students desiring financial aid for an academic year (September thru August) are encouraged to apply early (January thru March) to be given priority consideration for the funds available. Applications will be processed until all available funds are awarded.

Copies of all applications mentioned in the following procedure may be obtained from any high school guidance office, most college and university financial aid offices, or the ABTC Financial Aid Office.

Application Procedure

All applicants desiring priority consideration for available financial aid funds **must** complete the numbered steps below.

1. Before applying for financial aid it is advisable that each applicant complete the first three (3) steps of the Admission Procedure. (See the Table of Contents for the Admission Requirements and Procedures page reference.)
2. The applicant **must** complete and mail a Family Financial Statement (FFS) to: ACT Student Need Analysis Services, P.O. Box 1013, Iowa City, Iowa 52243. The form will be in the FFS Packet circulated by American College Testing (ACT).
3. In completing the FFS, the applicant **must** indicate that a copy be sent to ABTC, code 3063, and College Foundation North Carolina Student Incentive Grant Program (NCSIG).

4. All applicants **must** complete the appropriate section of the FFS requesting that the financial data on the FFS be used to determine their Pell Grant (formerly Basic Grant) eligibility. (Note: The FFS is to be used in applying for the Pell Grant).

Following the processing of the FFS, the applicant will receive a Student Financial Aid Report (SFAR) to review and correct (if necessary). The SFAR is simply a printout of the data reported by the applicant's family on the FFS. The applicant will also receive the Pell Grant Student Aid Report (SAR). The SAR **must** be forwarded by the applicant to the Financial Aid Office without delay.

Once the (a) Pell Grant Student Aid Report, (b) the NCSIG results and (c) the FFS results are received by ABTC's Financial Aid Office, the applicant's financial need will be determined. Official notification of awards is made no earlier than June 1st prior to enrollment. Each award is contingent upon the availability of funds.

(Important: The above procedure is identical for both in-state and out-of-state applicants; however, out-of-state applicants are not eligible to apply for NCSIG consideration but should apply for a state grant thru their state of legal residence.)

Students desiring additional information about the Financial Aid Program at ABTC are urged to write or phone: Director of Financial Aid, Asheville-Buncombe Technical College, 340 Victoria Road, Asheville, NC 28801, 704/254-1921, extension 159.

Satisfactory Progress Standards for Financial Aid

Introduction: The Higher Education Act of 1965, as amended by Congress in 1980, mandates institutions of higher education to establish minimum standards of "satisfactory progress" for students receiving financial aid. For the purpose of maintaining a consistent policy for all students receiving financial aid administered by the College's Financial Aid Office, these standards are applicable to all financial aid programs including all Federally sponsored Title IV programs.

Satisfactory Progress Defined: To initially receive or continue to receive financial aid, a student must demonstrate satisfactory progress as defined in the GENERAL COLLEGE ACADEMIC STATUS section of the catalog and meet the following condition: The maximum enrollment time frame for the curriculum must not be exceeded. The maximum enrollment time frame for this purpose is defined as the equivalent of twice the number of academic quarters, as outlined in the College catalog, required of full-time students to complete a curriculum.

Policies and Procedures: The specific policies and procedures to be used in applying the satisfactory progress standards are outlined below:

1. Satisfactory progress will be evaluated prior to each payment period on a quarterly basis. (Exception: For the Guaranteed Student Loan and PLUS Loan Programs evaluation will be completed prior to certification of the loan application.)
2. Grades of "F", "I", "X", "WP", "WF", "W", and "Y" will not qualify as successful completion of credit hours attempted.
3. Repeated courses for which the student initially received a grade of "I", "X", "WP", "WF", or "W" and was paid will not qualify for repayment.

Likewise, courses repeated which were previously completed with an acceptable grade toward the College's graduation requirements will not qualify for repayment.

4. Transfer credits from other postsecondary institutions will not be used to determine satisfactory progress.
5. Courses taken, which are not required to meet the graduation requirements of the curriculum program for which a student is enrolled, do not qualify for payment.
6. A student who fails to demonstrate satisfactory progress as defined will forfeit all financial aid awarded and disbursements will be terminated.
7. The maximum enrollment time frame will be prorated for those students who enroll on a half time or three-quarter time basis.

Appeal of Financial Aid Termination: To appeal financial aid termination a student must be able to demonstrate mitigating circumstances. The procedure for appeal is:

1. A student will indicate *in writing* to the Director of Financial Aid the reasons why he/she did not make satisfactory progress *and* why financial aid should not be terminated. Documentation to support the appeal is permitted.
2. The Director of Financial Aid will review the appeal to determine whether or not termination of aid is justified. The student will be advised of the decision in writing.
3. A student wishing to appeal the decision of the Director of Financial Aid, may do so, in writing to the Student Financial Aid Committee, c/o the Financial Aid Office. Additional appeals may be made to the Academic Affairs Committee and finally through the Student Due Process Procedure, if deemed necessary by the student.

Reinstatement of Financial Aid Eligibility: Should a student have his/her financial aid eligibility terminated due to not meeting the satisfactory progress definition, termination will continue until the student enrolls for a subsequent academic term at his/her own expense and completes the term satisfying the satisfactory progress definition. Once the satisfactory progress definition is met eligibility is re-instated for the subsequent academic term. In addition, financial aid eligibility will immediately be reinstated for all appeals upheld.

REFUNDS

Two-thirds of the student's tuition may be refunded if the student officially withdraws within ten calendar days from the first day of class. No tuition refunds will be made after that time or for students who withdraw without authority or who are dismissed for cause.

Student activity and insurance fees are non-refundable.

ADDITIONAL COSTS

A beginning student should be prepared to incur additional estimated expenses during the first quarter as follows:

BUSINESS EDUCATION

Books	Estimated	\$ 95.00-\$160.00
Supplies	Estimated	10.00- 15.00

ENGINEERING TECHNOLOGY

Books	Estimated	\$ 85.00-\$120.00
Supplies	Estimated	25.00- 35.00
Calculator	Estimated	20.00- 55.00
Instruments (Drafting)	Estimated	45.00

GENERAL EDUCATION

Books (Criminal Justice)	Estimated	\$ 85.00-\$110.00
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HEALTH EDUCATION, ALLIED

Books	Estimated	\$ 110.00-\$225.00
Uniforms, Shoes, Hose and/or Lab Costs ...	Estimated	13.00- 150.00
Instruments (Dental Hygiene, 1st Quarter) ...	Estimated	250.00- 300.00

HOSPITALITY EDUCATION

Books	Estimated	\$ 65.00-\$ 80.00
Uniforms	Estimated	30.00- 35.00

VOCATIONAL EDUCATION

Books	Estimated	\$ 65.00-\$105.00
Uniforms (Automotive)	Estimated	16.00
Tools	Estimated	35.00- 300.00
Drafting Equipment	Estimated	10.00- 20.00
Goggles (Welding)	Estimated	4.00

It is recommended that students enrolling in the Business Division, Technical Division and some Departments of the Vocational Division purchase a small electronic calculator. Calculators will not be permitted in MAT 100, MAT 105 or MAT 1101. Students should consult with their Department Chairperson or a member of the Math Department prior to the purchase of a calculator.

BOOKSTORE

A bookstore is operated by the College for the convenience of students and staff members to provide required textbooks and materials. Students should plan to purchase all texts and materials at the beginning of each quarter.

Textbook costs vary considerably depending upon the curriculum and quarter. Book costs vary from year to year because of changes in curriculum book prices, texts and material requirements.

All candidates for graduation are required to pay a graduation fee before attending graduation exercises in August. Graduation fees and cap and gown orders are collected by the bookstore in May. Graduation invitations are also available in the bookstore.

PARKING

All students are required to register their vehicles and display parking permits.

CLASS ATTENDANCE
(Class includes lecture, shop, lab, clinic, etc.)

Regular and punctual class attendance is expected of all students for them to achieve their potential in the curriculum they have chosen and to develop desirable personal traits necessary to obtain employment after graduation.

Instructors and the college will keep an accurate record of class attendance. Students who anticipate absence or tardiness should contact the instructors in advance if possible.

Instructional time missed because of circumstances beyond control of the student is considered to be excused. Justifiable reasons are:

1. Personal illness
2. Illness or death in immediate family
3. Necessary employment, civil, or military responsibilities (with documentation)
4. Official representative or participant in approved college activities
5. Emergencies including inclement weather

It is the responsibility of the student to account for instructional time missed and to make arrangements for makeups within 24 hours of returning to class. The instructor will determine if the instructional time missed is excusable. If the time is excused, the student will be permitted to make up missed work to the extent possible. Because of the nature of some learning experiences, especially shops, labs, and clinics, it is difficult if not impossible to duplicate the work of the class. The faculty has no obligation to assist with makeup for work missed for unexcused reasons.

Instructional time missed is a serious deterrent to learning. A student is responsible for fulfilling the requirements of the course by attending all classes (including shops, labs, and clinics) and completing course assignments. To receive course credit, a student should attend a minimum of 80 percent of the contact hours of the class. Upon accumulating absences exceeding 20 percent of the course contact hours, the student may be dropped from the class with a grade of "W" at the discretion of the instructor. Being late for class is also a serious interruption of instruction. A tardy is defined as arriving late for class, leaving early, or being away from class without permission during class hours. Three tardies may constitute one absence.

EXAMPLES OF EXCESSIVE ABSENCES

Total Class Contact Hours	Excessive Hours Absence
33	7
44	9
55	11
66	13
77	15
Other Hours	Hrs. X 0.20 rounded

IT IS THE JOINT RESPONSIBILITY OF THE STUDENT AND FACULTY TO DISCUSS ATTENDANCE PATTERNS THAT ARE **APPROACHING** THE POINT WHERE A STUDENT MAY BE DROPPED FROM THE COURSE.

In some programs, absence or tardiness of an individual may be a major disruption to the performance of others in the class or an inconvenience to

other organizations such as hospitals and clinics. In these programs, the faculty may require advanced notice of **any** attendance problems.

The student has the right to appeal to the Student Due Process Appeals Committee for problems with this regulation.

In the event that an instructor is not in class and arrangements have not been made, the class is dismissed after ten minutes. A roll must be signed by the students present and turned in to the Department Chairperson, Division Director, or Instructional Dean. Students enrolled in classes that meet for two or more hours and sign the roll and leave, must report to the classroom at the beginning of the second class hour. In the event that the instructor is not present for the second hour, the students again sign the roll and leave. If the course is scheduled for more than two hours, students will not be required to report to the classroom after the second hour.

STUDENT CONDUCT

Students will be expected to conduct themselves at all times as individuals of prudence and maturity. The rights and feelings of others will be respected. Each student shall demonstrate a high regard for school facilities and property and for the personal property of others.

School regulations which serve to control such activities as vehicle traffic and parking, smoking, loitering, and other aspects of personal conduct must be stringently observed.

Students may be promptly dismissed for conduct which is considered incompatible with standards of propriety and good judgment.

STUDENT LOUNGE

A snack-shop lounge is available. Other areas equipped with a variety of modern vending machines are provided for the convenience of students and faculty. Foods and drinks may not be taken into a classroom, shop or laboratory.

GRADING SYSTEM

Notice will be given to all students who are failing at mid-term and final grades will be issued at the end of the term to all students. Students will be graded on the acquirement of technical skills, ability to work under supervision, interest in work, initiative, and the ability to apply related information. A student who wants to contest a grade must do so within six weeks of the awarding of the grade.

Students will be graded by the following system:

A	93-100	Excellent
B	86-92	Above Average
C	78-85	Average
D	70-77	Passing
F	Below 70	Unsatisfactory
I	Incomplete	
X	Continuing	

WP	Withdrawal passing (official—no penalty)
WF	Withdrawal failing (official—no penalty)
W	Unofficial Withdrawal—Penalty
Y	Audit

I—Incomplete: Assigned when a student is unable to complete work or take a final examination because of illness or for other reasons over which the student has no control. An “incomplete” must be removed within the first six weeks of the next term. Otherwise, the grade becomes an “F”.

X—Continuing: Assigned when a student is unable to complete work during the current quarter because of class scheduling over consecutive quarters or at the discretion of the instructor to allow additional time to complete work. A “contract” of conditions for completion and time limit, not to exceed twelve (12) months, will be executed by the instructor and signed by both the instructor and student. If the terms to remove the grade of “X” are not fulfilled by the end of the contract period, the grade will revert to the average held at the beginning of the contract period.

WP—given when student OFFICIALLY WITHDRAWS and is passing at the time. This will not influence the quality point ratio.

WF—given when the student OFFICIALLY WITHDRAWS and is failing at the time. This will not influence the quality point ratio.

W—given when the student WITHDRAWS UNOFFICIALLY. This is processed as a grade of “F” and will influence the quality point ratio.

WITHDRAWAL

To qualify for honorable dismissal or a tuition refund, if due, a student must obtain an official withdrawal by completing a “withdrawal request” form. The student must have the form signed by each instructor and return it to the office of Student Services. The student will receive a grade of WP or WF, which will not influence the quality point ratio for the quarter. Under normal circumstances official withdrawal from individual courses will **not** be allowed after the eighth week of the quarter.

Students who leave school entirely, who leave one or more courses without completing the above procedure, or who withdraw from individual courses after the eighth week of the quarter, will receive a grade of W, UNOFFICIAL WITHDRAWAL. A “W” will be processed as a grade of “F.”

QUALITY POINTS

At the end of each quarter quality points are assigned in accordance with the following formula. (The minimum grade-point ratio for graduation is 2.00 or an average of grade C.)

- A — 4 quality points per credit hour
- B — 3 quality points per credit hour
- C — 2 quality points per credit hour
- D — 1 quality point per credit hour
- F — no quality points
- I — no quality points
- W — no quality points

Quality ratings are determined by dividing the total number of quality points by the number of hours attempted. A ratio of 2.00 indicates that a student has an average of C.

FAILURES

All failing grades in required courses must be removed before graduation. If a student fails a prerequisite course, it must be repeated successfully before beginning the next course. This could result in the student being enrolled for a longer period than is normally required to complete requirements for graduation.

As any courses are repeated, the new and recorded grades are compared. The higher of these becomes the official grade. Only a grade of "D or above" can replace an existing grade.

Students may be referred to the Admissions Committee for action if their effort and/or attitude is such that, in the judgment of their department chairperson, they cannot be successful in their studies.

GENERAL COLLEGE ACADEMIC STATUS

Good Standing: Good standing status permits curriculum enrollment for program course work at the College. Each of the following conditions must be met to be in good standing:

1. Former students must have graduated or be academically eligible to re-enter the College.
2. The student has not been suspended for disciplinary reasons.
3. The student has met all financial obligations to the College or has made satisfactory arrangements with the College to do so.

Satisfactory Progress: A curriculum student is making satisfactory progress toward completion of a diploma or a degree program if both of the following requirements are met:

1. A minimum 50% of the credit hours attempted during the last quarter of enrollment must be successfully completed. Successful completion for this purpose is defined as receiving a grade of "D" or better.
2. The cumulative quality point average must exceed the level that would result in academic suspension.

If a curriculum student is suspended academically for the first time and applies for admission as a "new" student in any program, the student is considered as making satisfactory progress during the initial quarter provided the re-entry quality point average is sufficient to avoid probation. Re-entry status is determined by internal evaluation and transfer of credit. After the re-entry quarter, the first definition of satisfactory progress applies. If a student is suspended again and re-enters a second time, satisfactory progress is defined as having and maintaining a quality point average of 2.00 or better.

Student appeals will be heard by the Director of Financial Aid.

ACADEMIC PROBATION AND SUSPENSION

1. A student will be placed on academic probation if the following average is not maintained:

END OF QUARTER	MINIMUM CUMULATIVE QUALITY POINT AVERAGE
1	1.50
2	1.75
3 and following	2.00

2. A student will be suspended from the program if the cumulative quality point average is below:
 - (a) the minimum requirement indicated above at the end of one quarter on probation.
 - (b) 1.50 after attempting a minimum of 30 hours. This regulation also applies to students who have not declared a major. A student may appeal to the Admissions Committee for readmission. Appeals must be made in writing within two school days of notice of suspension. After receipt of the appeal, the Admissions Committee must meet and act within three school days.
3. Students placed on probation or suspension will be informed and counseled by the following means:
 1. Department Chairperson identifies and counsels the student by the first day of classes for the next term.
 2. Student Services notifies the student in writing.
 3. Students are counseled by Student Services.

CONDITIONS OF PROBATION

In an effort to assist the student in his academic progress, the following conditions of probation have been developed:

1. A student who is placed on probation will not participate in extracurricular activities. Extracurricular activities shall consist of: (a) Student Government Office (Elected); (b) Officers of Curriculum Clubs; (c) Yearbook Officers; (d) Off-Campus Activities That Require Missing More Than One Class Day in Succession; (e) Activities in Which the Student Officially Represents the College.
2. A student on probation will not participate in the College's intercollegiate athletic program.
3. The Department Chairperson will require a reduced course load and must approve the course schedule for the following quarter. Exceptions require the written approval of the department chairperson.
4. Academic progress must be reviewed with the Department Chairperson at mid-quarter.

CONDITIONS OF SUSPENSION

For those students who have not maintained satisfactory progress in their current curriculum, the following conditions of suspension apply:

1. Suspension from the curriculum is for one quarter. This condition also applies to students who have not declared a major.

2. A suspended student will only be permitted to take Guided Studies developmental work or repeat courses in which there has been unsatisfactory progress.
3. A student suspended from one curriculum may apply for another curriculum. Admission requirements of the "new" curriculum must be met. Permission to enter the curriculum as well as approval of individual courses to be taken must be granted by the Department Chairperson.

DEAN'S LIST

1. Only a full-time student is to be considered. (A full-time student is defined as a student enrolled in a curriculum program, carrying a minimum of 12 quarter hours, or the maximum number of hours scheduled for the curriculum.)
2. Student is to have a minimum 3.50 quality point average to qualify for the quarter under consideration.
3. Grades of F, I, X, WP, WF, or W will eliminate a student from the dean's list for that particular quarter. Students receiving credit for a course by examination are not affected.
4. The list will be compiled by the Registrar, sent to the Department Chairperson, and the Vice-President, Instructional Services will be responsible for final approval and publication in local and pertinent hometown newspapers.
5. This list will be published following every quarter in the Asheville papers and in the hometown papers of qualifying students. (Allowing sufficient time for paper work.)

DEGREES, DIPLOMAS AND CERTIFICATES

Degree Programs Defined

Asheville-Buncombe Technical College will confer an Associate in Applied Science degree in most Technical and Business Curriculums. This is conferred in the name of the North Carolina State Board of Community Colleges when all requirements for graduation have been satisfied.

Diploma Programs Defined

Asheville-Buncombe Technical College will award a technical diploma for some seven- or eight-quarter programs. This diploma will be awarded in the name of the North Carolina State Board of Community Colleges when all requirements for graduation have been satisfied and will be presented as an "Associate of" in the specific curriculum area.

Asheville-Buncombe Technical College will award a Diploma in all Trade Curriculums. This diploma will be granted in the name of the North Carolina State Board of Community Colleges when all requirements for graduation have been satisfied.

Certificates

Certificates are issued in the name of the Asheville-Buncombe Technical College to students who successfully complete any short term program or course.

NOTE: Records of progress are kept on all students. Progress records are furnished to any student or graduate upon written request.

REQUIREMENTS FOR GRADUATION

The College will hold one graduation ceremony each year. This will normally be the last Friday evening in August. To graduate with a diploma or degree, the following minimum requirements must be met:

1. Complete the requirements of a College approved program of study. At least half of the credit hours in a program of study must be received at this College by taking courses and/or proficiency examinations.
2. Earn a grade of at least C in each course in the major and a minimum average of 2.0 (C) quality points on course work presented for graduation. Students completing their study with a grade point average of 4.0 will be graduated with highest honors. Those who have a minimum average of 3.75 will be graduated with high honors and a minimum of 3.50 has the distinction of honors.
3. Be in good standing and have the recommendation of the major course of study chairperson.
4. Submit an application for graduation to the book store before the published deadline date. Rent caps and gowns and purchase diplomas. (Prices may vary from year to year and do not include the purchase of optional items such as invitations or billfold diplomas.)
5. Fulfill all financial obligations to the College. Library clearance is also required.
6. Be present for graduation and attired in the proper academic robe. (Students who cannot attend graduation must submit to the President a written request to be excused two weeks prior to graduation.)

PLACEMENT SERVICE

No reputable college can guarantee jobs for graduates. However, the College will assist students and alumni in every possible way in obtaining suitable employment. The College provides placement service by working closely with local industries and the employment agencies. A Job Development specialist is available in Student Services to assist with full or part-time employment for current students and alumni.

DIVISION OF BUSINESS EDUCATION

A.A.S. DEGREE CONFERRED

The following areas of study are included in the Division of Business Education.

Business Administration

Electives will indicate a concentration in one of the following:

- Accounting
- Banking and Finance
- General Business
- Industrial Management
- Manufacturing Resources Planning
- Marketing

Electronic Data Processing

- Business Programming

Office Education

- Secretarial Science

TECHNICAL DIPLOMA AWARDED

Office Technology

- Data Entry Track
- Word Processing Track

All of the areas of study in the School of Business Education are seven quarters in duration and will require from twenty to thirty hours per week of course work. If a student elects to enroll in the School of Business Education through the Evening School, the time required for completion will be extended.

BUSINESS ADMINISTRATION

In North Carolina the opportunities in business are increasing. With the increasing population and industrial development in this state, business has become more competitive and automated. Better opportunities in business will be filled by people with specialized education beyond high school level. The Business Administration curriculum is designed to prepare the student for employment in one of many occupations common to business. Training is aimed at preparing the student in every phase of administrative work that might be encountered in the average business. The 1976-77 *Occupational Outlook Handbook*, published by the Department of Labor, reports good career opportunities for business graduates through the 1980's.

The Business Administration Department offers a flexible approach to meeting individual career objectives. During the first three quarters, the student enrolls in a common core of courses. With the assistance of faculty advisors, the student is expected to explore career opportunities available in the busi-

ness world. Beginning in the fourth quarter, the student will take certain courses and complete his/her schedule by electing courses which will meet individual career objectives. The department suggests two (2) electives per quarter.

Each student will be assigned an advisor and will be counseled prior to preregistration. Electives will be offered based upon results from demand surveys conducted early in the previous quarter. The student must have departmental approval of his/her schedule prior to registration.

The AAS degree in Business Administration will be awarded to a student meeting College requirements and completing required courses **plus a minimum of eight (8) elective courses** from a combination of the concentrations listed below.

For students wishing to concentrate in a specific area the Business Administration Department suggests the following electives. If a student chooses the designated courses in one concentration, the degree will reflect this achievement.

Accounting		Banking & Finance		Industrial Management		Marketing	
*BUS	122	BUS	122	BUS	222	*BUS	206
BUS	206	*BUS	206	*BUS	249	BUS	208
BUS	208	*BUS	207	*ISC	102	BUS	222
*BUS	223	*BUS	208	*ISC	202	*BUS	237
*BUS	225	BUS	222	*ISC	203	*BUS	238
*BUS	226	*BUS	238	*ISC	209	*BUS	240
*BUS	230	BUS	248	*ISC	211	*BUS	241
*BUS	269	BUS	214	MAT	214	BUS	248
MAT	214					*BUS	266
						ECO	107
						MAT	214

*Designated Courses

Objectives of Curriculum

The objectives of the Business Administration Curriculum are to develop the following competencies:

1. Understanding of the principles of organization and management in business operations and utilizations of modern methods for adequate decision making.
2. An understanding of our American economic system through the study of macroeconomics; a study and analysis of the role of finance, and of marketing to include product, place, promotion, and price.
3. Knowledge in specific elements of accounting, banking and finance, marketing, industrial management, postal service management, as indicated by the student’s academic choices.
4. Understanding and skill in effective communications for business.
5. Knowledge of human relations as they apply to successful business operations in our economy.

Business Administration

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
BUS	101	Introduction to Business	3	2	4
BUS	120	Accounting I	5	2	6
ENG	100	Reading Comprehension	1	2	2
ENG	101	Fundamentals of English	3	0	3
MAT	105	Introduction to Algebra	3	0	3
			<u>15</u>	<u>6</u>	<u>18</u>
Second Quarter (Winter)					
BUS	110	Business Machines	1	3	2
BUS	121	Accounting II	5	2	6
ECO	102	Economics I	3	0	3
ENG	102	Composition	3	0	3
MAT	110	Business Mathematics	5	0	5
			<u>17</u>	<u>5</u>	<u>19</u>
Third Quarter (Spring)					
BUS	123	Finance I	5	0	5
BUS	125	Introduction to Banking Fundamentals	5	0	5
BUS	239	Introduction to Marketing	5	0	5
MAT	112	Mathematics of Finance	3	2	4
			<u>18</u>	<u>2</u>	<u>19</u>
Fourth Quarter (Summer)					
BUS	115	Business Law I	3	0	3
ECO	104	Economics II	3	0	3
EDP	104	Introduction Business Data Processing	2	2	3
ENG	204	Oral Communication	3	0	3
			<u>11</u>	<u>2</u>	<u>12</u>
Possible Electives					
BUS	122	Accounting III	5	2	6
BUS	206	Banking and Finance Credit	5	0	5
BUS	240	Channels of Distribution	5	0	5
BUS	249	Inventory Control	5	0	5
EDP	208	Commercial Basic	3	2	4
ISC	102	Industrial Safety	3	0	3
ISC	209	Plant Layout	3	2	4
SSC	101	Basic Typewriting	2	3	3
Fifth Quarter (Fall)					
BUS	116	Business Law II	3	0	3
BUS	234	Introduction to Management	3	2	4
			<u>6</u>	<u>2</u>	<u>7</u>
Possible Electives					
BUS	207	Principles of Bank Operations	3	2	4
BUS	222	Control Accounting	3	2	4
BUS	223	Intermediate Accounting	5	0	5
BUS	236	Small Business Management	3	0	3
BUS	238	Consumer Behavior	3	2	4
ISC	202	Quality Control	3	2	4
MAT	214	Statistics	5	0	5
SOC	201	Sociology	3	0	3

			Hrs. Per Week Class	Lab	Credit Hrs.
Sixth Quarter (Winter)					
BUS	229	Taxes I	3	2	4
ENG	206	Business Communications	3	0	3
PSY	206	Applied Psychology	3	0	3
			<u>9</u>	<u>2</u>	<u>10</u>

Possible Electives

BUS	208	Financial Statements Analysis	3	2	4
BUS	225	Cost Accounting I	5	0	5
BUS	231	Government and Business	3	0	3
BUS	235	Business Organization and Management	3	2	4
BUS	237	Advertising	5	0	5
BUS	248	Marketing Research	5	0	5
BUS	269	Auditing	3	2	4
BUS	296	Real Estate Fundamentals for Salespersons	6	0	6
ISC	203	Time and Motion Study	3	2	4

Seventh Quarter (Spring)

BUS	233	Personnel Management & Supervision	5	0	5
BUS	247	Insurance	5	0	5
ENG	103	Report Writing	3	0	3
			<u>13</u>	<u>0</u>	<u>13</u>

Possible Electives

BUS	226	Cost Accounting II	5	0	5
BUS	230	Taxes II	3	2	4
BUS	241	Retailing	5	0	5
BUS	266	Professional Sales Techniques	3	0	3
BUS	298	Real Estate Fundamentals for Brokers II	5	0	5
ECO	107	Consumer Economics	3	0	3
ISC	211	Work Measurement	3	2	4
SSC	271	Office Management	3	0	3



MANUFACTURING RESOURCES PLANNING

In recent years American industry has been reassessing its manufacturing practices. Out of this introspection has grown increased use of computer technology for planning and newer ideas such as MRP.

Manufacturing Resources Planning is a curriculum designed to introduce the student to the different functions involved in manufacturing and selling a product. This training will scan the field from marketing to master scheduling.

The graduate will have an understanding of systems found in manufacturing, will have a knowledge of the computer as an integral job tool, will gain a knowledge of entry-level shop floor scheduling, production planning, and inventory control functions along with master scheduling duties.

In order to become a part of the manufacturing community, the student is encouraged to join the Asheville Chapter of the American Production and Inventory Control Society and to sit for APICS certification test modules at the completion of each course represented by a test module. Certification is available in:

Materials Requirements Planning	(MRP 103)
Inventory Management	(MRP 105)
Master Planning	(MRP 203)
Capacity Management	(MRP 201)
Shop Floor Control	(MRP 207)
(retitled Production Activity Control)	

Occupational Opportunities

Manufacturing Resources Planning graduates have opportunities in jobs titled inventory control manager (supervisor), production planning manager (supervisor), buyer, purchasing coordinator, supply room manager, production planning coordinator, scheduler, expeditor, materials analyst.

Manufacturing Resources Planning

MRP 101 and MRP 102 will be offered sequentially in the Fall and Winter quarters. Subsequent MRP courses will be scheduled as demand becomes adequate.

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
MRP	101	Manufacturing Resources Planning I	4	0	4
BUS	101	Introduction to Business	3	2	4
ENG	100	Reading Comprehension	1	2	2
ENG	101	Fundamentals of English	3	0	3
MAT	100	Basic Math	5	0	5
			16	4	18
Second Quarter (Winter)					
MRP	102	Manufacturing Resources Planning II	4	0	4
BPR	111	Blueprint Reading	1	2	2
ECO	102	Economics	3	0	3
EDP	104	Introduction to Business Data Processing	2	2	3
MAT	101	Algebra and Trigonometry I	5	0	5
			15	4	17

			Hrs. Per Week Class	Lab	Credit Hrs.
Third Quarter (Spring)					
MRP	103	Materials Requirements Planning	4	0	4
BUS	140	Accounting Concepts for Manufacturing/Industry	3	2	4
BUS	235	Business Organization and Management	3	2	4
ENG	102	Composition	3	0	3
MAT	214	Statistics	5	0	5
			<u>18</u>	<u>4</u>	<u>20</u>
Fourth Quarter (Summer)					
MRP	105	Inventory Management	4	0	4
BUS	222	Control Accounting	3	2	4
BUS	239	Introduction to Marketing	5	0	5
EDP	164	Introduction to Programming	2	2	3
MEC	111	Manufacturing Processes	3	3	4
			<u>17</u>	<u>7</u>	<u>20</u>
Fifth Quarter (Fall)					
MRP	201	Capacity Management	4	0	4
MRP	203	Master Planning	5	0	5
MRP	205	Methods, Standards, Routings	4	0	4
ENG	204	Oral Communications	3	0	3
PSY	206	Applied Psychology	3	0	3
			<u>19</u>	<u>0</u>	<u>19</u>
Sixth Quarter (Winter)					
MRP	207	Shop Floor Control	4	0	4
MRP	209	Factory Layout & Design	3	0	3
MRP	211	Purchasing	4	0	4
EDP	220	Systems Analysis and Design	2	3	3
ENG	103	Report Writing	3	0	3
			<u>16</u>	<u>3</u>	<u>17</u>
Seventh Quarter (Spring)					
MRP	216	Advanced Projects	3	0	3
MRP	217	Certification Review	2	2	3
			<u>5</u>	<u>2</u>	<u>6</u>

ELECTRONIC DATA PROCESSING

Increasing business and industrial use of computers in North Carolina is providing a trend of increasing job opportunities in the field of electronic data processing. There is a need for qualified personnel to initiate and maintain electronic data processing functions and operations at all levels. The education and experience acquired through this curriculum prepares the student for many positions in the field of electronic data processing and in related areas of business and industry.

Business Programming is a seven-quarter curriculum and leads to an Associate in Applied Science Degree. Most credits may be transferred to senior institutions. Data Processing Operations is a three quarter program following four quarters in Office Technology and leads to a Technical Diploma.

The data processing hardware available to all students consists of a UNIVAC 90/30B computer configured with 120 megabytes of on-line disk storage, 500 K primary storage, one tape drive, 12 video-display terminals, and a 500 line-per-minute printer. This system offers the combined hardware and software capabilities to satisfy and maintain the language requirements of all courses in the data processing curriculum.

Business Programming

This curriculum is designed to give the student a broad background in business data processing. Technical courses emphasizing computer programming in five languages, systems and procedures, and operating systems are supported by practical business, commercial, and industrial application problems. These data processing courses include lectures to introduce theory and new concepts, example problems utilizing common techniques, and practical laboratory problems for the individual students.

Occupational Opportunities

Business programming graduates have opportunities in computer programming, computer operations, systems analysis and design, and data processing supervision. These positions may be found in banking, business, civil service, educational institutions, industry, and insurance.

Business Programming

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
EDP	104	Introduction to Business Data Processing	2	2	3
BUS	101	Introduction to Business	3	2	4
ENG	100	Reading Comprehension	1	2	2
ENG	101	Fundamentals of English	3	0	3
MAT	100	Mathematics	5	0	5
			14	6	17

			Hrs. Per Week Class	Lab	Credit Hrs.
Second Quarter (Winter)					
EDP	107	Third Generation Operating Systems	3	2	4
EDP	108	Business Programming (assembler)	4	0	4
BUS	120	Accounting I	5	2	6
MAT	101	Algebra and Trigonometry I	5	0	5
SSC	101	Basic Typewriting	2	3	3
			<u>19</u>	<u>7</u>	<u>22</u>
Third Quarter (Spring)					
EDP	109	Systems and Procedures (Assembler)	1	3	2
BUS	121	Accounting II	5	2	6
MAT	102	Algebra and Trigonometry II	5	0	5
PSY	206	Applied Psychology	3	0	3
			<u>14</u>	<u>5</u>	<u>16</u>
Fourth Quarter (Summer)					
EDP	205	Scientific Programming (FORTRAN IV)	2	2	3
EDP	208	Commercial BASIC	2	2	3
ECO	102	Economics I	3	0	3
ENG	102	Composition	3	0	3
MAT	214	Statistics	5	0	5
			<u>15</u>	<u>4</u>	<u>17</u>
Fifth Quarter (Fall)					
EDP	218	Business Programming (RPG II)	4	0	4
EDP	219	Systems and Procedures (RPG II)	1	3	2
BUS	222	Control Accounting	3	2	4
ENG	204	Oral Communications	3	0	3
MAT	112	Mathematics of Finance	3	2	4
			<u>4</u>	<u>7</u>	<u>17</u>
Sixth Quarter (Winter)					
EDP	118	Data Base Management Concepts	3	2	4
EDP	215	Business Programming (COBOL)	4	0	4
EDP	216	Systems and Procedures (COBOL)	1	3	2
EDP	220	Systems Analysis and Design	2	3	3
			<u>10</u>	<u>8</u>	<u>13</u>
Seventh Quarter (Spring)					
EDP	217	Business Programming (Advanced COBOL)	4	0	4
EDP	221	Advanced Projects (COBOL)	1	3	2
BUS	234	Introduction to Management	3	2	4
ECO	107	Consumer Economics	3	0	3
ENG	103	Report Writing	3	0	3
			<u>14</u>	<u>5</u>	<u>16</u>

OFFICE EDUCATION

The Office Education Department endeavors to teach students those skills and attitudes necessary to staff positions found in any type of office.

The student may choose one of two approaches to achieve this goal: Secretarial Science or Office Technology. Both programs are twenty-one months in length. **The Associate in Applied Science degree is awarded the Secretarial Science graduate; the Office Technologist earns the Associate of Office Technology-Technical Diploma.**

Secretarial Science

The purpose of the curriculum is to instruct the student in the aspects involved in the role of the secretary in order to enable the individual to succeed in the position as the communications' link for management.

To accomplish this purpose, the department endeavors to teach, in addition to skills and general business courses, occupational intelligence, and also endeavors to help the student develop a secretarial personality.

Occupational Opportunities

A graduate of this program could perform in any secretarial position in business, industry, education, government, etc. With additional specialized work, the individual could qualify to enter a secretarial position in the field of health services or law.

Secretarial Science

			Hrs. Per Week	Credit
			Class	Hrs.
First Quarter (Fall)				
*SSC	100	Shorthand Speed Building	1	2
SSC	101	Basic Typewriting (or Credit by Examination)	2	3
SSC	102	Shorthand	3	4
BUS	101	Introduction to Business	3	4
ENG	100	Reading Comprehension	1	2
ENG	101	Fundamentals of English	3	3
			12(10)	16(14)
Second Quarter (Winter)				
SSC	103	Advanced Typewriting	2	3
SSC	104	Shorthand	3	4
SSC	127	Business English	3	3
BUS	115	Business Law I	3	3
MAT	110	Business Mathematics	5	5
			16	18

*SSC 100—Only for students who have had previous shorthand training. Class hours dependent upon shorthand class taken.

			Hrs. Per Week Class	Lab	Credit Hrs.
Third Quarter (Spring)					
SSC	105	Expert Typewriting	2	3	3
SSC	106	Shorthand	3	2	4
BUS	110	Business Machines	1	3	2
BUS	120	Accounting I	5	2	6
ENG	102	Composition	3	0	3
			<hr/> 14	<hr/> 10	<hr/> 18
Fourth Quarter (Summer)					
SSC	111	Information Processing Systems	1	3	2
SSC	112	Records Management	3	0	3
SSC	113	Personal Development	3	0	3
BUS	121	Accounting II	5	2	6
			<hr/> 12	<hr/> 5	<hr/> 14
Fifth Quarter (Fall)					
SSC	205	Professional Typewriting	2	3	3
SSC	206	Dictation and Transcription	3	2	4
ECO	105	Introduction to Economics	5	0	5
EDP	104	Introduction to Business Data Processing	2	2	3
ENG	204	Oral Communication	3	0	3
			<hr/> 15	<hr/> 7	<hr/> 18
Sixth Quarter (Winter)					
SSC	207	Secretarial Procedures & Administration I	3	2	4
SSC	208	Dictation and Transcription	3	2	4
SSC	272	Terminology	2	0	2
ECO	107	Consumer Economics	3	0	3
ENG	205	Written Communication	5	0	5
			<hr/> 16	<hr/> 4	<hr/> 18
Seventh Quarter (Spring)					
SSC	209	Secretarial Procedures & Administration II	3	2	4
SSC	210	Dictation and Transcription	3	2	4
SSC	271	Administrative Services Management	3	0	3
PSY	206	Applied Psychology	3	0	3
			<hr/> 12	<hr/> 4	<hr/> 14

Credits toward the A.A.S. degree in Secretarial Science may be given to persons holding the Certified Professional Secretary rating. If interested, those holding this certification should contact the Chairperson, Department of Office Education. Persons interested in becoming a candidate for the certification can obtain information from the Institute for Certifying Secretaries, 2440 Pershing Road, Suite 6, 10 Crown Center, Kansas City, Missouri 64108.

†Credits toward the A.A.S. degree in Secretarial Science may be given to persons holding the Professional Legal Secretary rating. If interested, those holding this certification should contact the Chairperson, Department of Office Education. Persons interested in becoming a candidate for the certification can obtain information from the National Association of Legal Secretaries (International), Administrative Offices, 3005 East Skelly Drive, Suite 120, Tulsa, Oklahoma 74105.

OFFICE TECHNOLOGY

This curriculum is devoted to training students for office careers in positions of varied responsibilities. As the trend of business and government positions is toward expanded and varied duties involving multiple skills and activities, training for these positions is a process of segmenting (for concentrated learning) and then combining (for selected universal application) these diversified skills and activities into a component curriculum for preparation for office employment. Therefore, a broad general base of office skills is followed by a selected concentration of preparation in either word processing or data entry.

Occupational Opportunities

A graduate of this program earns the Associate of Office Technology Technical Diploma and is qualified for positions in offices where the processing of information (words and/or data) is the primary activity. Such positions include: receptionist in a variety of offices; accounting and payroll clerk; data entry clerk; word processor; computer operator in data-support areas; ward secretary, medical records clerk, and similar careers in the medical field. Opportunities for employment may be available in government offices following the attainment of a civil service rating.

Office Technology

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
SSC	101	Basic Typewriting (or Credit by Examination)	2	3	3
*ENG	111	Grammar	5	0	5
ENG	100	Reading Comprehension	1	2	2
MAT	108	Business Arithmetic	5	0	5
			<u>13</u>	<u>5</u>	<u>15</u>
Second Quarter (Winter)					
SSC	103	Advanced Typewriting	2	3	3
BUS	100	Contemporary Business	3	2	4
BUS	110	Business Machines	1	3	2
ENG	102	Composition	3	0	3
*PSY	1101	Human Relations	3	0	3
			<u>12</u>	<u>8</u>	<u>15</u>
Third Quarter (Spring)					
SSC	105	Expert Typewriting	2	3	3
*OTC	100	Spelling and Punctuation Study	3	0	3
*BUS	117	Clerical Accounting	5	2	6
*ECO	108	Consumer Economics	5	0	5
†OTC	111	Information Processing Technologies	1	3	2
(EDP	171	Principles of Keyboarding)	(2)	(3)	(3)
			<u>16(17)</u>	<u>8</u>	<u>19(20)</u>

			Hrs. Per Week	Credit
			Class	Lab Hrs.
Fourth Quarter (Summer)				
SSC	113	Personal Development	3	0
SSC	205	Professional Typewriting	2	3
*OTC	116	Filing	5	0
*BUS	118	Clerical Accounting II	5	2
EDP	171	Principles of Keyboarding	2	3
(OTC	111	Information Processing Technologies)	(1)	(3)
			17(18)	8 20(19)

NOTE: At this point, students will request either a **Word Processing or Data Entry Track**. (Selection may be competitive, depending upon the number of requests. Criteria for competition are available for student review.)

WORD PROCESSING TRACK

Fifth Quarter (Fall)				
OTC	110	Practical Office English	3	0
†OTC	272	Vocabulary Building	2	0
SSC	215	Word Processing	2	3
EDP	104	Introduction to Business Data Processing	2	2
EDP	200	Introduction to Microcomputers	2	3
			11	8 14

Sixth Quarter (Winter)				
OTC	213	Office Procedures	3	2
OTC	214	Machine Transcription	2	3
OTC	216	Payroll Procedures	5	0
ENG	204	Oral Communications	3	0
ENG	205	Written Communications	5	0
			18	5 20

Seventh Quarter (Spring)				
††OTC	218	Cooperative Education	0	20
††OTC	220	Seminar on Cooperative Education	2	0
			2	20 4

DATA ENTRY TRACK

Fifth Quarter (Fall)				
EDP	104	Introduction to Business Data Processing	2	2
EDP	160	EDP Operations	2	3
EDP	172	Data Entry: Concepts and Applications	2	3
EDP	200	Introduction to Microcomputers	2	3
†OTC	272	Vocabulary Building	2	0
			10	11 14

Sixth Quarter (Winter)				
EDP	164	Introduction to Programming	2	2
EDP	175	Production Data Entry	1	4
OTC	213	Office Procedures	3	2
OTC	216	Payroll Procedures	5	0
ENG	204	Oral Communications	3	0
			14	8 18

				Hrs. Per Week	Credit	
				Class	Lab	Hrs.
Seventh Quarter (Spring)						
††OTC 218	Cooperative Education			0	20	2
††OTC 220	Seminar on Cooperative Education			2	0	2
				<hr/>	<hr/>	<hr/>
				2	20	4

*The following substitutions may be made: ECO 108-ECO 105; ENG 111-ENG 101; PSY 1101-PSY 206; OTC 100-SSC 127; BUS 117, BUS 118-BUS 120, BUS 121; OTC 116-SSC 112.

†SSC courses with similar digits, course titles, and subject content may be substituted for OTC courses with department chairperson’s permission.

††Subject to departmental guidelines, appropriate work experience may be used in lieu of OTC 218 and OTC 220.

DIVISION OF ENGINEERING TECHNOLOGY

A.A.S. DEGREE CONFERRED

The following areas of study are included in the school of engineering technology:

- Chemical Engineering Technology
- Civil Engineering Technology
- Drafting and Design Technology
- Electronics Technology
- Mechanical Engineering Technology

The curriculums in the School of Engineering Technology are seven quarters in duration and will require about twenty-five to thirty hours per week in classroom and laboratory work. If a student elects to enroll in the School of Engineering Technology through evening division, the time required for completion will be extended.

The Division of Engineering Technology will require each student to demonstrate an ability to do research as it relates to original thinking. Certain courses are required of every student irrespective of the curriculum area. These courses are core courses and will serve as supporting areas of study in addition to the subjects required by the technical specialty.

SPECIFIC ENTRANCE REQUIREMENTS FOR ENGINEERING

1. General college admission requirements.
2. Have high school credit for two units of math, one of which is in algebra and the other in algebra II, plane geometry, or equivalent.
3. It is recommended that the candidate should have completed a unit of science beyond general science, such as physics or chemistry.

CHEMICAL ENGINEERING TECHNOLOGY (Industrial)

The Chemical Technology curriculum prepares individuals as research assistants to chemists in the laboratory or as planning and production assistants to chemical engineers in actual industrial production.

Chemical technicians perform quantitative and qualitative chemical analyses of processes involved in research, production or monitoring situations. They test samples of raw materials to determine that they are within specification limits required, analyze samples of finished products to determine quality, and prepare laboratory test reports, check chemical analyses with specifications, and operate electronic laboratory equipment.

Occupational Opportunities

The chemical technology graduate will find employment in a wide variety of fields such as foods, metals, paints, glass, plastics, rubber, fuels, paper, building products, dyes, oils, lubricants, heavy chemicals, crime laboratory and water and air pollution.

This individual will fill such jobs as research assistant, control chemist, laboratory technician, chemical analyst, pilot plant foreman, chemical mix sample tester, pollution control technician, water quality tester and chemical strength tester.

Chemical Engineering Technology

			Hrs. Per Week Class	Week Lab	Credit Hrs.
First Quarter (Fall)					
CHM	111	General Chemistry	3	4	5
ECO	105	Introduction to Economics	5	0	5
ENG	101	Fundamentals of English	3	0	3
MAT	100	Basic Mathematics	5	0	5
			<u>16</u>	<u>4</u>	<u>18</u>
Second Quarter (Winter)					
CHM	112	General Chemistry	3	4	5
ENG	102	Composition	3	0	3
MAT	101	Algebra and Trigonometry I	5	0	5
MEC	111	Manufacturing Processes	3	3	4
PHY	101	Properties of Matter	3	2	4
			<u>17</u>	<u>9</u>	<u>21</u>
Third Quarter (Spring)					
CHM	113	General Chemistry	3	4	5
CHM	121	Qualitative Analysis	3	6	5
ENG	103	Report Writing	3	0	3
MAT	102	Algebra and Trigonometry II	5	0	5
PHY	102	Mechanics	3	2	4
			<u>17</u>	<u>12</u>	<u>22</u>
Fourth Quarter (Summer)					
CHM	222	Quantitative Chemical Analysis	3	6	5
DFT	106	Technical Graphics	2	4	4
ENG	204	Oral Communications	3	0	3
MAT	103	Analytical Geometry and Calculus I	5	0	5
PHY	103	Electricity	3	2	4
			<u>16</u>	<u>12</u>	<u>21</u>
Fifth Quarter (Fall)					
CHM	223	Quantitative Chemical Analysis	2	9	5
CHM	231	Organic Chemistry	3	6	5
MEC	235	Hydraulics and Pneumatics	3	3	4
SOC	201	Sociology	3	0	3
			<u>11</u>	<u>18</u>	<u>17</u>

			Hrs. Per Week	Credit
			Class	Hrs.
Sixth Quarter (Winter)				
CHM	232	Organic Chemistry	3	5
CHM	241	Industrial Chemical Analysis	3	6
PSY	206	Applied Psychology	3	3
			<hr/>	<hr/>
			9	14

Seventh Quarter (Spring)				
CHM	242	Industrial Chemical Analysis	3	6
CHM	244	Environmental Chemistry	3	4
EDP	105	Introduction to Scientific Data Processing	2	3
			<hr/>	<hr/>
			8	13

CIVIL ENGINEERING TECHNOLOGY

Construction technicians perform many of the planning and supervisory tasks necessary in the construction of highways, bridges, power plants, dams, missile sites, airfield, water and sewage treatment plants, industrial buildings and utilities. In the planning stages of construction they may be engaged in estimating costs, ordering materials, interpreting specifications, computing earthwork and fills and storm drainage requirements, surveying or drafting. Once the actual construction work has begun, many technicians perform supervisory functions. Some may be responsible for seeing that construction activities are performed in proper sequence, and for inspecting the work as it progresses for conformance with blueprints and specifications.

Occupational Opportunities

Graduates should qualify for various jobs such as surveying instrument men or party chiefs, construction estimators, materials testing technicians (lab or field), construction foremen, structures and materials design technicians, construction equipment and materials salesmen, and field draftsmen.

Civil Engineering Technology

			Hrs. Per Week	Credit
			Class	Hrs.
First Quarter (Fall)				
MAT	101	Algebra and Trigonometry I	5	5
CIV	217	Construction Methods, Equipment and Materials	4	6
ENG	101	Fundamentals of English	3	3
SOC	201	Sociology	3	3
			<hr/>	<hr/>
			15	17
Second Quarter (Winter)				
MAT	102	Algebra and Trigonometry II	5	5
PHY	101	Properties of Matter	3	4
DFT	101	Drafting	2	4
CIV	220	Engineering Construction and Project Planning	4	4
ENG	102	Composition	3	3
			<hr/>	<hr/>
			17	20

			Hrs. Per Week Class	Lab	Credit Hrs.
Third Quarter (Spring)					
*MAT	103	Analytical Geometry and Calculus I	5	0	5
CIV	101	Surveying	2	6	4
EDP	105	Introduction to Scientific Data Processing	2	2	3
PHY	102	Mechanics	3	2	4
			<hr/> 12	<hr/> 10	<hr/> 16
Fourth Quarter (Summer)					
CIV	103	Surveying	2	6	4
CHM	102	Engineering Chemistry	2	2	3
CIV	114	Statics	5	0	5
CIV	218	Properties of Plain Portland Concrete	2	2	3
DFT	104	Civil Drafting	2	4	4
			<hr/> 13	<hr/> 14	<hr/> 19
Fifth Quarter (Fall)					
CIV	102	Surveying	2	6	4
CIV	216	Strength of Materials	5	0	5
CIV	202	Properties of Soils	2	2	3
CIV	221	Properties of Asphalt	2	2	3
			<hr/> 11	<hr/> 10	<hr/> 15
Sixth Quarter (Winter)					
CIV	228	Contracts, Engineering Relations and Ethics	2	2	3
CIV	225	Estimates, Codes, and Specifications	4	4	6
CIV	219	Steel and Timber Construction	4	4	6
CIV	224	Reinforced Portland Concrete	2	2	3
			<hr/> 12	<hr/> 12	<hr/> 18
Seventh Quarter (Spring)					
CIV	204	Surveying	2	6	4
CIV	229	Branches of Civil Engineering Technology	3	3	4
ENG	103	Report Writing	3	0	3
PSY	206	Applied Psychology	3	0	3
ENG	204	Oral Communication	3	0	3
			<hr/> 14	<hr/> 9	<hr/> 17

*MAT 204 may be substituted for MAT 103

DRAFTING AND DESIGN TECHNOLOGY

The Drafting and Design Technology curriculum is designed to provide the student with knowledge and skills that will lead to employment and advancement in the field of mechanical drafting and design. This curriculum provides drafting room experience supplemented by a planned sequence of related courses and shop experiences. Emphasis is placed on the ability to think and plan, as well as drafting procedures and techniques.

Drafting and design technicians perform many aspects of drafting in a specialized field such as the developing of the drawing for a detail part, sub assembly or major component. Investigation of design factors, availability of material and equipment, production methods and facilities are frequent assignments. Technicians may assist in the design of units, cost estimating, and preparation of reports on functional performance. Also, they may be assigned as coordinators for the execution of related work of other design, production,

tooling, material and planning groups. Technicians with experience in this classification may often supervise the preparation of working drawings.

Occupational Opportunities

Job opportunities are found in many types of manufacturing, fabrication, research development, and service industries. Substantial numbers are also employed in communications, transportation, public utilities, consulting engineering firms, architectural firms, and governmental agencies.

Drafting and Design Technology

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
DFT	101	Drafting	2	4	4
ENG	101	Fundamentals of English	3	0	3
MAT	100	Basic Mathematics	5	0	5
MEC	111	Manufacturing Processes	3	3	4
SOC	201	Sociology	3	0	3
			16	7	19
Second Quarter (Winter)					
DFT	102	Drafting	2	4	4
ENG	102	Composition	3	0	3
MAT	101	Algebra and Trigonometry I	5	0	5
MEC	101	Machine Processes	2	4	4
PHY	101	Properties of Matter	3	2	4
			15	10	20
Third Quarter (Spring)					
DFT	103	Drafting	2	4	4
DFT	204	Descriptive Geometry	2	6	4
MAT	102	Algebra and Trigonometry II	5	0	5
PHY	102	Mechanics	3	2	4
			12	12	17
Fourth Quarter (Summer)					
DFT	201	Design Drafting I	2	6	4
MAT	204	Applied Mathematics	5	0	5
MEC	105	Statics	5	0	5
MEC	211	Basic Physical Metallurgy	3	3	4
			15	9	18
Fifth Quarter (Fall)					
DFT	205	Design Drafting II	2	6	4
MEC	205	Strength of Materials	5	0	5
MEC	235	Hydraulics and Pneumatics	3	3	4
PHY	103	Electricity	3	2	4
			13	11	17
Sixth Quarter (Winter)					
DFT	211	Mechanisms and Kinematics Design	2	6	4
DFT	212	Jig and Fixture Design	2	6	4
ENG	204	Oral Communications	3	0	3
ENG	103	Report Writing	3	0	3
			10	12	14

			Hrs. Per Week Class	Lab	Credit Hrs.
Seventh Quarter (Spring)					
DFT	206	Design Drafting III	2	6	4
DFT	242	Architectural Drafting	2	6	4
EDP	105	Introduction to Scientific Data Processing	2	2	3
ELC	201	Electrical Machinery	3	0	3
PSY	206	Applied Psychology	3	0	3
			<u>12</u>	<u>14</u>	<u>17</u>

ELECTRONICS TECHNOLOGY

The Electronics Technology curriculum provides a broad theoretical and practical program of training for those who seek electronic careers in industry and government. Step by step instructional techniques are utilized to insure a sound background in theory leading to a broad understanding of complex circuits. In initial laboratory experiments, students develop skills in the use of modern electronic test equipment and measuring instruments. Later laboratory work includes analysis of circuits, construction of circuits and theory of circuit design.

The related subjects include applied physics, mathematics, technical report writing, industrial organization, technical drawing and an introduction to data processing systems. An intensive two-quarter review of mathematics is available for students desiring additional preparation in this subject.

Occupational Opportunities

Research and development engineering assistant, computer technician, manufacturers technical representative, technical representatives, medical electronics technologists and laboratory technician.

Electronics Technology

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
ELN	101	Fundamentals of D.C.	4	4	6
ENG	100	Reading Comprehension	1	2	2
ENG	101	Fundamentals of English	3	0	3
MAT	100	Basic Mathematics	5	0	5
SOC	201	Sociology	3	0	3
			<u>16</u>	<u>6</u>	<u>19</u>
Second Quarter (Winter)					
ELN	102	Fundamentals of A.C.	4	4	6
CHM	102	Engineering Chemistry	2	2	3
ENG	102	Composition	3	0	3
MAT	101	Algebra and Trigonometry I	5	0	5
PHY	101	Properties of Matter	3	2	4
			<u>17</u>	<u>8</u>	<u>21</u>

			Hrs. Per Week Class	Lab	Credit Hrs.
Third Quarter (Spring)					
ELN	104	Vacuum Tube Network Analysis	4	4	6
ENG	204	Oral Communication	3	0	3
MAT	102	Algebra and Trigonometry II	5	0	5
MAT	121	Numbering Systems and Boolean Algebra	3	0	3
PHY	102	Mechanics	3	2	4
			18	6	21
Fourth Quarter (Summer)					
ELN	106	Introduction to Solid State Devices	4	4	6
ELN	207	Transistor Amplifier Analysis	4	4	6
DFT	109	Electronics Drafting	2	4	4
MAT	103	Analytical Geometry and Calculus I	5	0	5
			15	12	21
Fifth Quarter (Fall)					
ELN	209	Circuit Analysis	4	4	6
ELN	217	Introduction to Special Devices	4	4	6
MAT	201	Calculus II	5	0	5
PHY	104	Light and Sound	3	2	4
			16	10	21
Sixth Quarter (Winter)					
ELN	211	Logic Circuits	4	4	6
ELN	213	Waveshaping and Pulse Circuits	4	4	6
ENG	103	Report Writing	3	0	3
PSY	206	Applied Psychology	3	0	3
			14	8	18
Seventh Quarter (Spring)					
ELN	214	Microprocessors	4	4	6
ELN	219	Industrial Instrumentation	4	4	6
ELN	221	Electronic Circuit Design	4	4	6
EDP	105	Introduction to Scientific Data Processing	2	2	3
			14	14	21

MECHANICAL ENGINEERING TECHNOLOGY

This curriculum offers a broad, well-rounded education to those desiring to become an engineering technician. The wide scope of subject matter covered prepares the graduate for employment in many branches of the mechanical engineering field.

The general knowledge of mechanical principles can be supplemented by additional courses available throughout the term. Students may also select courses which will broaden their knowledge of business principles, commercial law, use of data processing equipment, manual skills or mathematics.

The student learns to apply the theory and principles of basic mechanical engineering to the design, development and testing of machinery under the guidance of the engineering staff. He learns to prepare detail and design drawings to scale, and also drawing in perspective. The student is prepared to provide all necessary sketches, illustrations, orthographic drawings as well as preliminary, final and testing specifications for design or redesign of most types of industrial machinery or tooling. He is taught to plan scientific tests or

evaluations to discover cause of breakdown. The student is prepared to support the engineering work needed for design or utilization of new machines, redesigned machines or machine components, sub-assemblies and complete assembly lines. He is trained in industrial safety techniques, proper approaches to cooperation with fellow workers, and the basic industrial management techniques.

Occupational Opportunities

The graduate is prepared for jobs such as mechanical engineering technician, experimental technician, laboratory-development technician, general engineering technician, engineering aide, shop foreman trainee, industrial engineering trainee, and inspector. Many industrial firms as well as government agencies will pay tuition and occasionally other expenses of further education for graduates of this program.

Mechanical Engineering Technology

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
MEC	212	Practical Automation	3	0	3
MAT	100	Basic Mathematics	5	0	5
DFT	101	Drafting	2	4	4
ENG	101	Fundamentals of English	3	0	3
SOC	201	Sociology	3	0	3
			16	4	18
Second Quarter (Winter)					
MEC	111	Manufacturing Processes	3	3	4
MAT	101	Algebra and Trigonometry I	5	0	5
DFT	102	Drafting	2	4	4
ENG	102	Composition	3	0	3
PHY	101	Properties of Matter	3	2	4
			16	9	20
Third Quarter (Spring)					
DFT	204	Descriptive Geometry	2	6	4
EDP	105	Introduction to Scientific Data Processing	2	2	3
ENG	103	Report Writing	3	0	3
MAT	102	Algebra and Trigonometry II	5	0	5
PHY	102	Mechanics	3	2	4
			15	10	19
Fourth Quarter (Summer)					
MEC	105	Statics	5	0	5
MEC	210	Physical Metallurgy	3	3	4
ENG	204	Oral Communications	3	0	3
MAT	103	Analytical Geometry and Calculus I	5	0	5
PHY	103	Electricity	3	2	4
			19	5	21

			Hrs. Per Week	Credit	
			Class	Lab	Hrs.
Fifth Quarter (Fall)					
MEC	101	Machine Processes	2	4	4
MEC	205	Strength of Materials	5	0	5
MEC	235	Hydraulics and Pneumatics	3	3	4
BUS	101	Introduction to Business	3	2	4
			13	9	17
Sixth Quarter (Winter)					
MEC	206	Dynamics	3	0	3
MEC	208	Machine Design I	4	0	4
MEC	220	Power Systems	3	2	4
ELC	201	Electrical Machinery	3	0	3
			13	2	14
Seventh Quarter (Spring)					
MEC	209	Machine Design II	4	0	4
CHM	102	Engineering Chemistry	2	2	3
ISC	102	Industrial Safety	3	0	3
PSY	206	Applied Psychology	3	0	3
			12	2	13



DIVISION OF GENERAL EDUCATION

A.A.S. DEGREE CONFERRED

The Division of General Education is supportive of all curriculum programs and offers the following area of study in both day and evening programs.

CRIMINAL JUSTICE— LAW ENFORCEMENT TECHNOLOGY

SPECIFIC ENTRANCE REQUIREMENTS FOR GENERAL EDUCATION PROGRAMS

1. General college admission requirements.
2. Three character references are required. One of the references must be from a local law enforcement agency.
3. Individuals seeking careers as law enforcement officers must meet the Minimum Standards for Employment criteria outlined in the North Carolina Code Book-General Statute 17-A. These may be reviewed in law enforcement agencies or the Student Services office at the College. These requirements are independent of the College and its program.

CRIMINAL JUSTICE—LAW ENFORCEMENT TECHNOLOGY

The purpose of the Criminal Justice—Law Enforcement Technology program is to provide for knowledge and skills needed in law enforcement and related fields. In recent years, these fields have evolved into highly complex professions requiring preparation in specialized areas such as criminal law, criminalistics, traffic enforcement, and criminal investigations. A broad background in general education including psychology and sociology is necessary in these careers.

Occupational Opportunities

A Criminal Justice—Law Enforcement graduate may find employment with various law enforcement agencies in positions such as officer, administrator, special investigator, and lab technician. The graduate will also have a background desirable for positions in security services such as guard, surveillance officer, transportation officer, communications technician, and security administrator.

Criminal Justice—Law Enforcement Technology

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
CJC	101	Introduction to Criminal Justice	5	0	5
POL	103	State and Local Government	4	0	4
ENG	100	Reading Comprehension	1	2	2
PSY	101	Introduction to Psychology	3	0	3
ELECTIVE			—	—	—
			13	2	14
Second Quarter (Winter)					
CJC	102	Introduction to Criminology	5	0	5
EMS	100	Introduction to Emergency Medical Services	2	2	3
ENG	101	Fundamentals of English	3	0	3
MAT	100	Basic Mathematics	5	0	5
ELECTIVE			—	—	—
			15	2	16
Third Quarter (Spring)					
CJC	115	Criminal Law I	3	0	3
CJC	205	Criminal Evidence	4	0	4
ENG	102	Composition	3	0	3
PSY	203	Abnormal Psychology	3	0	3
ELECTIVE			—	—	—
			13	0	13
Fourth Quarter (Summer)					
CJC	201	Motor Vehicle Law	3	0	3
CJC	210	Criminal Investigation I	4	0	4
CJC	216	Criminal Law II	3	0	3
ENG	204	Oral Communications	3	0	3
PHO	201	Introduction to Photography	1	2	2
ELECTIVE			—	—	—
			14	2	15
Fifth Quarter (Fall)					
CJC	110	Introduction to Juvenile Justice	5	0	5
CJC	211	Introduction to Criminalistics	4	2	5
CJC	213	Criminal Investigation II	4	0	4
PSY	151	Applied Psychology for Law Enforcement	3	0	3
ELECTIVE			—	—	—
			16	2	17
Sixth Quarter (Winter)					
CJC	125	Judicial Process	4	0	4
CJC	200	Crime Prevention	3	0	3
CJC	202	Traffic Planning and Management	3	2	4
ENG	103	Report Writing	3	0	3
SOC	201	Sociology	3	0	3
ELECTIVE			—	—	—
			16	2	17

			Hrs. Per Week Class	Lab	Credit Hrs.
Seventh Quarter (Spring)					
CJC	206	Community Relations	3	0	3
CJC	212	Narcotics, Drugs and Human Behavior	3	2	4
CJC	217	Patrol Procedures	3	0	3
CJC	220	Police Organization, Administration and Supervision	5	0	5
MAT	214	Statistics	5	0	5
			<u>19</u>	<u>2</u>	<u>20</u>

Electives

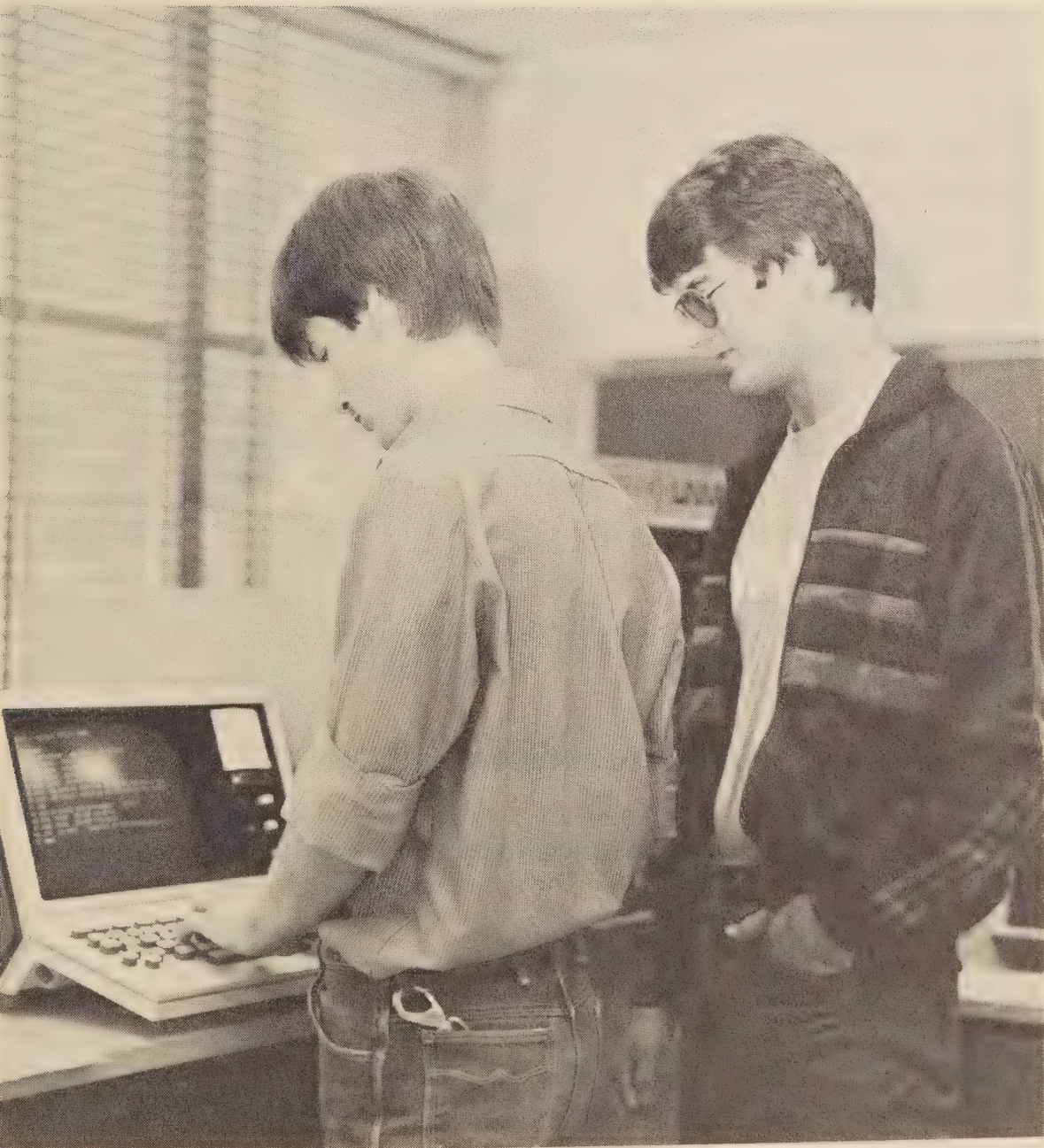
In addition to required courses, students must complete a minimum of sixteen (16) credit hours of approved electives. These may be taken at any time during the program, providing the student has completed the proper prerequisites and has departmental approval of his/her schedule prior to registration.

Electives may be offered on the basis of results from demand surveys conducted early in the previous quarter. Selected electives may be scheduled during the quarters indicated below:

		Fall	Winter	Spring	Summer
BIO-101	Human Anatomy and Physiology I	X			
BIO-102	Human Anatomy and Physiology II . . .		X		
BIO-111	Basic Life Sciences	X			
BUS-100	Contemporary Business		X		
BUS-101	Introduction to Business	X			
BUS-110	Business Machines		X	X	
BUS-115	Business Law I		X		X
BUS-116	Business Law II	X			
BUS-120	Accounting I	X	X	X	
BUS-121	Accounting II		X	X	X
BUS-125	Bank Fundamentals			X	
BUS-233	Personnel Management and Supervision		X	X	
BUS-234	Introduction to Management	X		X	
CHM-100	Introduction to Chemistry	X	X	X	
CHM-101	Fundamentals of Physiological Chemistry	X			
CHM-111	General Chemistry	X			
CJC-105	Introduction to Correction	Will be offered by demand survey			
CJC-106	Probation and Parole	Will be offered by demand survey			
CJC-107	Police Liability	Will be offered by demand survey			
CJC-111	Defense Tactics	Will be offered by demand survey			
*CJC-116-121	CJC Internship (1 Cr. Hr. Each)	See Department Chairperson			
ECO-102	Economics I		X		
ECO-104	Economics II			X	
ECO-107	Consumer Economics	X	X		
ECO-108	Consumer Economics		X		
EDP-104	Introduction to Business Data Processing	X			X
EDP-105	Introduction to Scientific Data Processing	X		X	
MAT-101	Algebra and Trigonometry I		X		

MAT-105	Introduction to Algebra	X			
MAT-110	Business Mathematics		X		
PED-130	Beginner Physical Fitness	X	X	X	X
PED-131	Intermediate Physical Fitness	X	X	X	X
SSC-101	Basic Typewriting	X			

*Internships of ten (10) contact hours per week per quarter may be completed by Criminal Justice students in partial fulfillment of the elective requirements. Internships are designed to demonstrate the competency of the student through extension of the learning initiated in previous Criminal Justice courses. A maximum of six (6) credit hours may be earned through internships. Prerequisite: Permission of the department chairperson.



DIVISION OF ALLIED HEALTH EDUCATION

The Allied Health Program provides an opportunity for extensive and intensive study in several areas of health. It will enable the student to engage in a health career of his choice and acquire sufficient knowledge of health so that he may be able to enjoy a healthful and satisfying life and also develop an understanding in helping those with whom he comes in contact in his work and everyday living. Students desiring training in health occupations need to have a background in science, chemistry, biology, social sciences, and varying degrees of mathematics, and possess the emotional stability required by the profession.

North Carolina resident applications for the Medical and Dental Programs must be submitted during the month of January each year. Non-residents of North Carolina will be considered only in the event vacancies exist after the month of January.

In the event that any curriculum has more qualified applicants than can be served, selection criteria will be imposed. Applicants will be provided specific information regarding criteria.

A.A.S. DEGREE CONFERRED

Associate Degree Nursing
Dental Hygiene
Emergency Medical Science
Medical Laboratory Technology
Radiologic Technology

DIPLOMA AWARDED

Dental Assisting
Paramedics
Practical Nurse Education

For additional information about any of the above areas of study, see the specific area in this catalogue.

ASSOCIATE DEGREE NURSING

Nursing is a profession devoted to conserving life and promoting health. This two year program consists of the study of nursing theory and practice as well as such general education subjects as English and the natural and social sciences. Selected patient experiences are provided in local general hospitals and other community health facilities. These experiences include the care of adults, children, mothers and their infants.

The Associate in Applied Science degree is awarded upon successful completion of this program. The graduate is eligible to take the state examination for licensure as a registered nurse.

Specific Entrance Requirements

1. General college admission requirements.
2. Have high school credit for four units of English, two units of mathematics-one of which must be algebra, chemistry and biology.
3. Three personal references.
4. Acceptable reports of medical and dental examinations.
5. 18 to 45 years of age (individual exceptions made by faculty).
6. The North Carolina Board of Nursing may deny license to individuals "convicted of a felony or any other crime involving moral turpitude."

Associate Degree Nursing

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
NUR	101	Fundamentals of Nursing I	5	4	7
BIO	101	Anatomy and Physiology I	4	3	5
CHM	101	Fundamentals of Physiological Chemistry	3	2	4
ENG	101	Fundamentals of English	3	0	3
			<hr/> 15	<hr/> 9	<hr/> 19
Second Quarter (Winter)					
NUR	103	Fundamentals of Nursing II	5	8	9
BIO	102	Anatomy and Physiology II	4	3	5
ENG	102	Composition	3	0	3
PSY	101	Introduction to Psychology	3	0	3
			<hr/> 15	<hr/> 11	<hr/> 20
Third Quarter (Spring)					
NUR	105	Fundamentals of Nursing III	5	8	9
BIO	103	Microbiology	4	3	5
ENG	103	Report Writing	3	0	3
PSY	203	Abnormal Psychology	3	0	3
			<hr/> 15	<hr/> 11	<hr/> 20
Fourth Quarter (Summer)					
*NUR	206	Psychiatric Nursing	4	6	6
*NUR	207	Maternity Nursing	4	6	6
SOC	201	Sociology	3	0	3
			<hr/> 11	<hr/> 12	<hr/> 15
Fifth Quarter (Fall)					
NUR	208	Growth and Development	3	0	3
NUR	210	Nursing in Physical and Mental Illness I	8	16	16
			<hr/> 11	<hr/> 16	<hr/> 19
Sixth Quarter (Winter)					
NUR	211	Nursing Trends and Professional Ethics	3	0	3
NUR	212	Nursing in Physical and Mental Illness II	8	16	16
ENG	204	Oral Communications	3	0	3
			<hr/> 14	<hr/> 16	<hr/> 22

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
Seventh Quarter (Spring)					
NUR	213	Comprehensive Nursing	2	0	2
NUR	214	Nursing in Physical and Mental Illness III	8	18	17
			<hr/> 10	<hr/> 18	<hr/> 19

*Mini-Courses

DENTAL HYGIENE

The dental hygienist is a valued and effective member of the dental health team. As the only licensed dental auxiliary, she performs specific intra-oral procedures which are directed toward the prevention of oral disease. Clinical dental hygiene services include: removing deposits and stains from the teeth, applying medicaments to the teeth, taking and recording medical and dental histories, charting existing conditions of the teeth and supporting tissues, exposing and processing x-ray film, and educating individuals and groups in obtaining maximum oral health.

The curriculum provides comprehensive educational experiences through lectures and clinical experience to qualify the graduate for the practice of dental hygiene in accordance with the educational, professional, ethical and legal standards of the Commission on Dental Education of the American Dental Association, and the North Carolina State Board of Dental Examiners. Graduates in the curriculum receive the Associate Degree of Applied Science.

Specific Entrance Requirements

1. General college admission requirements.
2. Have high school credit for four units of English, two units of Algebra (one unit may be plane geometry), one unit of chemistry and one unit of biology. Science oriented college preparatory courses are recommended.
3. Acceptable reports of medical and dental examinations.

Dental Hygiene

			Hrs. Per Week			Credit
			Class	Lab	Clinic	Hrs.
First Quarter (Fall)						
DHY	103	Dental Radiology I	3	2	0	4
DHY	104	Dental and Oral Anatomy	3	4	0	5
DHY	110	Preclinical Dental Hygiene I	2	6	0	5
BIO	101	Human Anatomy & Physiology I	4	3	0	5
			<hr/> 12	<hr/> 15	<hr/> 0	<hr/> 19

			Hrs. Per Week			Credit Hrs.
			Class	Lab	Clinic	
Second Quarter (Winter)						
DHY	105	Dental Radiology II	1	3	0	2
DHY	106	Oral Embryology & Histology	3	0	0	3
DHY	111	Preclinical Dental Hygiene II	3	6	0	6
BIO	102	Human Anatomy & Physiology II	4	3	0	5
CHM	101	Fundamentals of Physiological Chemistry	3	2	0	4
			14	14	0	20
Third Quarter (Spring)						
DHY	114	General & Oral Pathology I	2	0	0	2
DHY	116	Dental Hygiene Seminar I	3	2	0	4
DHY	117	Dental Hygiene Clinic I	0	0	9	3
DHY	206	Dental Materials	3	4	0	5
BIO	103	Microbiology	4	3	0	5
			12	9	9	19
Fourth Quarter (Summer)						
DHY	115	General & Oral Pathology II	2	0	0	2
DHY	118	Dental Hygiene Seminar II	2	2	0	3
DHY	119	Dental Hygiene Clinic II	0	0	9	3
NUT	202	Nutrition	3	0	0	3
ENG	101	Fundamentals of English	3	0	0	3
PSY	101	Introduction to Psychology	3	0	0	3
			13	2	9	17
Fifth Quarter (Fall)						
DHY	205	Periodontology	3	0	0	3
DHY	216	Dental Hygiene Seminar III	3	3	0	4
DHY	217	Dental Hygiene Clinic III	0	0	12	4
DHY	221	Pharmacology	3	0	0	3
ENG	102	Composition	3	0	0	3
SOC	201	Sociology	3	0	0	3
			15	3	12	20
Sixth Quarter (Winter)						
DHY	203	Community Dental Health I	3	2	0	4
DHY	218	Dental Hygiene Seminar IV	3	3	0	4
DHY	219	Dental Hygiene Clinic IV	0	0	12	4
ECO	107	Consumer Economics	3	0	0	3
ENG	204	Oral Communication	3	0	0	3
			12	5	12	18
Seventh Quarter (Spring)						
DHY	222	Community Dental Health II	1	4	0	3
DHY	223	Dental Hygiene Seminar V	3	3	0	4
DHY	224	Dental Hygiene Clinic V	0	0	12	4
ENG	103	Report Writing	3	0	0	3
			7	7	12	14

DENTAL ASSISTING

The Dental Assisting Program is designed to prepare the student to become an essential member of the dental health team. The dental assistant graduate will have the experience and a background of technical knowledge and general education to become a productive member of the dental care profession. Working under the direct supervision of the dentist, the dental assistant will be prepared to assist the dentist in chairside duties, office management, laboratory procedures and patient flow.

A graduate will be eligible to sit for the Dental Assisting National Certification Examination.

Specific Entrance Requirements

1. The general admission requirements and procedures for enrollment into a curriculum program at A-B Tech.
2. Reports of medical and dental examinations.

Dental Assisting

			Hrs. Per Week			Credit
			Class	Lab	Clinic	Hrs.
First Quarter (Fall)						
DEN	1103	Dental Materials I	2	2	0	3
DEN	1104	Oral Anatomy & Histology	2	2	0	3
DEN	1120	Clinical Science I	3	4	0	5
DEN	1121	Dental Radiology	2	2	3	4
BIO	1109	Biomedical Sciences	4	2	0	5
			<u>13</u>	<u>12</u>	<u>3</u>	<u>20</u>
Second Quarter (Winter)						
DEN	1106	Head & Neck Anatomy	2	0	0	2
DEN	1122	Dental Materials II	2	2	0	3
DEN	1123	Oral Health Education	2	0	3	3
DEN	1130	Clinical Science II	3	3	3	5
ENG	101	Fundamentals of English	3	0	0	3
			<u>12</u>	<u>5</u>	<u>6</u>	<u>16</u>
Third Quarter (Spring)						
DEN	1105	Dental Science	3	2	0	4
DEN	1125	Dental Affiliation I	1	0	12	5
DEN	1131	Dental Office Management	3	2	0	4
DEN	1133	Dental Office Emergencies	2	2	0	3
			<u>9</u>	<u>6</u>	<u>12</u>	<u>16</u>
Fourth Quarter (Summer)						
DEN	1135	Dental Affiliation II	1	0	18	7
DEN	1141	Professional Development	3	0	0	3
ENG	204	Oral Communications	3	0	0	3
PSY	1101	Human Relations	3	0	0	3
			<u>10</u>	<u>0</u>	<u>18</u>	<u>16</u>

EMERGENCY MEDICAL SCIENCE

The Emergency Medical Science Program is designed to train students in a two year Paramedic curriculum leading to an Associate in Applied Science Degree and to prepare graduates for certification as an EMT-P (Emergency Medical Technician—Paramedic). The curriculum is also structured to allow for the training of Emergency Medical Technicians (EMT) and Emergency Medical Technician—Intermediate (EMT-I). Students seeking EMT training may exit at the end of the second quarter, while those seeking EMT-I training may exit at the end of the third quarter.

Students who successfully complete any of the various training levels may seek appropriate certification through the North Carolina Office of Emergency Medical Services. Certification at advanced levels (EMT-I and EMT-P) is not a requirement for graduation. Such certification is based on criteria as designated by the North Carolina Office of Emergency Medical Services and the individual’s affiliation with a service that is a provider at the advanced life support level.

Students enrolled in the Emergency Medical Science Program will receive clinical training at several major hospitals in the area. The EMS student will also receive field experience at several of the regional EMS services. Limited opportunities for clinical and field experience may require that the student receive this training on weekends and during the evening hours.

Specific Entrance Requirements

- 1. General college admission requirements.
- 2. Must be 18 years of age at the end of the second quarter of the program.
- 3. Current N.C. drivers’ license.
- 4. Acceptable reports of medical and dental examinations.
- 5. Character/employment references (three).
- 6. The North Carolina Office of Emergency Medical Services requires that a physician certify the “candidate to be physically fit and free from physical defects, handicaps, or diseases” which might impair ability to drive, attend an ambulance, and/or perform any duties prescribed by OEMS.

Emergency Medical Science

				Hrs. Per Week			Credit Hrs.
				Class	Lab	Clinic	
First Quarter (Fall)							
††EMS	101	Fundamentals of EMS		4	2	1	5
††BIO	101	Human Anatomy & Physiology I		4	3	0	3
ENG	101	Fundamentals of English		3	0	0	3
PSY	101	Introduction to Psychology		3	0	0	3
				14	5	1	16

			Hrs. Per Week			Credit
			Class	Lab	Clinic	Hrs.
Second Quarter (Winter)						
‡†EMS	102	Emergency Assessment & Intervention	4	0	3	5
EMS	112	Emergency Vehicle Operation, Communications, and Record Keeping	5	2	0	6
‡†BIO	102	Human Anatomy & Physiology II	4	3	0	5
ENG	102	Composition	3	0	0	3
			16	5	3	19
Third Quarter (Spring)						
EMS	103	Principles of Extrication & Rescue	4	3	0	5
†EMS	104	Injury Management	4	2	0	5
†EMS	105	Clinical Seminar & Practicum I	2	0	9	5
PSY	203	Abnormal Psychology	3	0	0	3
			13	5	9	18
Fourth Quarter (Summer)						
EMS	108	Clinical Seminar & Practicum II	2	0	9	5
EMS	110	Pharmacology for EMS	4	0	0	4
EMS	201	Advanced Life Support I	4	2	0	5
			10	2	9	14
Fifth Quarter (Fall)						
EMS	202	Clinical Seminar & Practicum III	2	0	9	5
EMS	203	Emergency Psychiatric Care	3	0	0	3
EMS	205	Advanced Life Support II	4	2	0	5
EMS	213	Industrial Hazards & Disaster	2	2	0	3
			11	4	9	16
Sixth Quarter (Winter)						
EMS	206	Clinical Seminar & Practicum IV	2	0	9	5
EMS	207	OB, Newborn, and Pediatric Emergencies	4	0	0	4
ENG	204	Oral Communications	3	0	0	3
SOC	201	Sociology	3	0	0	3
			12	0	9	15
Seventh Quarter (Spring)						
EMS	211	Clinical Seminar & Practicum V	2	0	9	5
EMS	215	EMS Personnel Management	4	2	0	5
EMS	216	Fundamentals of Public Safety	3	2	0	4
ENG	103	Report Writing	3	0	0	3
			12	4	9	17

All courses are required for the A.A.S. degree.

‡Courses required for EMT-Certification.

†Courses required for EMT-Intermediate Certification.

MEDICAL LABORATORY TECHNOLOGY

ASSOCIATE DEGREE

Medical Technicians furnish physicians with the laboratory data used in the diagnosis and treatment of patients. They perform a majority of the examinations of blood and other body fluids, isolate and identify disease producing organisms; conduct blood banking procedures, serological tests, and do blood collections. They work under the supervision of a Medical Technologist (ASCP) and a pathologist or other clinical scientist, although at times they are capable of working without immediate supervision.

The program is an integrated type program having general academic and medical laboratory type courses. Clinical experiences are conducted in the Clinical Laboratory at Memorial Mission Hospital. Because of clinical space requirements the students will have individual schedules for MLT clinical experiences. During the first year of the curriculum, Clinical Experience classes will begin at 6:15 a.m.

The MLT program is accredited by the Council on Allied Health Education and accreditation (CAHEA) of the American Medical Association for Medical Technologists through the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS). The program has accreditation for a maximum of 12 second year students in clinical experience at Memorial Mission Hospital. In the event there are more than 12 students who successfully complete first year courses, only the top 12 will be allowed to continue during the next school year.

The following will be utilized in selecting students for second year courses.

1. Cumulative grade point average.
2. Grades of C or better in MLT Courses
3. Progression Committee Review rating characteristics including attitude, adaptability, attendance, etc.

Graduates of this curriculum are eligible to take the certifications offered as follows: Medical Laboratory Technician-AD, Board of Registry; Clinical Laboratory Personnel; Medical Laboratory Technician, American Medical Technologists; Medical Laboratory Technician, International Society of Clinical Laboratory Technologists.

Specific Entrance Requirements

1. General college admission requirements.
2. a. Chemistry and algebra required.
b. Biology strongly recommended.
3. Character references (three).
4. Reports of medical and dental examinations.

Medical Laboratory Technology

			Hrs. Per Week			Credit
			Class	Lab	Clinic	Hrs.
First Quarter (Fall)						
MLT	101	Clinical Experience I	4	0	6	6
BIO	101	Human Anatomy and Physiology I	4	3	0	5
ENG	101	Fundamentals of English	3	0	0	3
MAT	106	Introduction to Mathematics	3	0	0	3
SOC	201	Sociology	3	0	0	3
			<u>17</u>	<u>3</u>	<u>6</u>	<u>20</u>
Second Quarter (Winter)						
MLT	105	Hematology I	2	2	0	3
MLT	107	Clinical Chemistry I	1	2	0	2
MLT	108	Clinical Experience II	2	0	6	4
BIO	102	Human Anatomy and Physiology II	4	3	0	5
CHM	103	MLT Chemistry I	3	2	0	4
			<u>12</u>	<u>9</u>	<u>6</u>	<u>18</u>
Third Quarter (Spring)						
MLT	112	Clinical Chemistry II	1	2	0	2
MLT	113	Clinical Experience III	0	0	9	3
MLT	114	Immunohematology I	3	2	0	4
MLT	115	Microbiology I	1	2	0	2
CHM	104	MLT Chemistry II	3	2	0	4
			<u>8</u>	<u>8</u>	<u>9</u>	<u>15</u>
Fourth Quarter (Summer)						
MLT	106	Urinalysis	1	2	0	2
MLT	116	Microbiology II	2	2	0	3
MLT	118	Immunohematology II	1	2	0	2
MLT	119	Clinical Experience IV	0	0	6	2
MLT	121	Hematology II	1	4	0	2
ENG	204	Oral Communications	3	0	0	3
			<u>8</u>	<u>10</u>	<u>6</u>	<u>15</u>
Fifth Quarter (Fall)						
MLT	202	Clinical Experience V	0	0	27	9
MLT	201	Microbiology III	1	2	0	2
ENG	102	Composition	3	0	0	3
			<u>4</u>	<u>2</u>	<u>27</u>	<u>14</u>
Sixth Quarter (Winter)						
MLT	206	Clinical Experience VI	0	0	27	9
MLT	220	Parasitology	1	2	0	2
PSY	101	Introduction to Psychology	3	0	0	3
			<u>4</u>	<u>2</u>	<u>27</u>	<u>14</u>
Seventh Quarter (Spring)						
MLT	205	Hematology III	1	2	0	2
MLT	208	Clinical Chemistry Values	2	0	0	2
MLT	209	Clinical Experience VII	0	0	27	9
			<u>3</u>	<u>2</u>	<u>27</u>	<u>13</u>

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
Eighth Quarter (Summer)					
MLT	211	Instrumentation	0	2	1
MLT	212	Clinical Experience VIII	0	0	9
ENG	103	Report Writing	3	0	3
			3	2	13

PRACTICAL NURSE EDUCATION

The aim of the Practical Nurse Education program is to prepare qualified persons for participation in care of patients of all ages, in various states of dependency, and with a variety of illness conditions.

Throughout the one year program, the student is expected to progress in the acquisition of knowledge, the performance of nursing skills, and adjustment to the nursing situation.

Graduates of this accredited program of practical nurse education are eligible to take the licensing examination given by the North Carolina Board of Nursing. A passing score entitles the individual to receive a license and to use the legal title "Licensed Practical Nurse." The Licensed Practical Nurse can apply for licensure in other states.

Specific Entrance Requirements

1. General college admission requirements.
2. Three personal references.
3. Reports of medical and dental examinations.
4. The North Carolina State Board of Nursing may deny license to individuals "convicted of a felony or any crime involving moral turpitude."

Practical Nurse Education

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
PNE	1111	Introduction to Nursing	2	0	2
PNE	1112	Fundamentals of Nursing	8	2	10
PNE	1117	Nutrition	4	0	4
BIO	111	Basic Life Sciences	4	3	5
ENG	101	Fundamentals of English	3	0	3
			21	5	24
Second Quarter (Winter)					
PNE	1120	Clinical I Medical-Surgical	0	0	5
PNE	1122	Medical-Surgical Nursing I	12	0	12
PNE	1123	Maternal and Infant Care	4	0	4
PNE	1124	Pediatric Nursing I	2	0	2
			18	0	23

			Hrs. Per Week			Credit
			Class	Lab	Clinic	Hrs.
Third Quarter (Spring)						
PNE	1130	Clinical II Obstetrics & Pediatrics	0	0	21	7
PNE	1132	Medical-Surgical Nursing II	10	0	0	10
PNE	1134	Pediatric Nursing II	2	0	0	2
			12	0	21	19

Fourth Quarter (Summer)

PNE	1140	Clinical III Medical-Surgical	0	0	21	7
PNE	1142	Medical-Surgical Nursing III	10	0	0	10
PNE	1144	Vocational Adjustments	2	0	0	2
			12	0	21	19

RADIOLOGIC TECHNOLOGY

The changes created by new techniques have resulted in demands for increased knowledge on the part of the radiologic technologist. In addition to mastering radiologic technique, the student must also become familiar with other sources of radiation in order to properly assist the physician. The Associate Degree curriculum provides opportunity for training in this exacting science.

The radiologic technologist may assist Radiologists in examining for broken bones, tumors or malfunctioning organs, and under the supervision of a physician, assist in treating diseased or affected areas of the body. Other tasks may include maintaining equipment, ordering supplies, keeping records of patient's films and reports, and darkroom maintenance.

Exposure of a pregnant female to radiation must be avoided because of the possible harmful effects to the developing fetus. Since the practical work of student technologists involves some exposure to radiation, it is felt that this portion of training should be discontinued for any female student known to be pregnant. In some instances, it may be possible for the student to continue to attend classes and complete practical work at a later date.

Students enrolled in the Radiologic Technology Program will receive clinical training at the major hospitals in the area. Because of the limited space in the existing clinical facilities, students will be divided into two groups: one-half will receive their clinical experience in the morning and the other half during the afternoon. This will be done on a rotational basis.

During the two year period of training, student technologists will be expected to work on the weekends on a rotational basis. WEEKEND WORK WILL NOT NECESSARILY FOLLOW THE CALENDAR IN THE SCHOOL CATALOG.

Prior to acceptance, student must have complete physical examination which includes (1) chest x-ray, (2) dental examination, (3) blood tests, and (4) immunization shots.

After completion of two years of study, the student may take the American Registry Examination which is recognized by the American Medical Association. Successful passing of this examination qualifies the student to use the abbreviation, R.T., Registered Technologist.

Specific Entrance Requirements

1. General college admission requirements.
2. Biology, Algebra, Physics strongly recommended.
3. Three letters of recommendation.

Radiologic Technology

			Hrs. Per Week Class	Lab	Credit Hrs.
First Quarter (Fall)					
RAD	100	Introduction to Radiology	3	0	3
RAD	102	Radiographic Technique I	4	0	4
RAD	106	Clinical Technique I	0	12	4
RAD	135	Radiological Anatomy I	2	0	2
NUR	125	Nursing Procedures	2	0	2
			<hr/> 11	<hr/> 12	<hr/> 15
Second Quarter (Winter)					
RAD	111	Positioning I	2	0	2
RAD	112	Radiographic Technique II	2	0	2
RAD	114	Clinical Technique II	1	24	9
RAD	136	Radiological Anatomy II	3	0	3
BIO	107	Anatomy and Physiology I	4	0	4
			<hr/> 12	<hr/> 24	<hr/> 20
Third Quarter (Spring)					
RAD	121	Positioning II	2	0	2
RAD	124	Clinical Technique III	1	24	9
BIO	108	Anatomy and Physiology II	4	0	4
PHY	105	Physics	4	0	4
			<hr/> 11	<hr/> 24	<hr/> 19
Fourth Quarter (Summer)					
RAD	131	Positioning III	2	0	2
RAD	134	Clinical Technique IV	1	24	9
RAD	205	Medical Use of Radioisotopes	2	0	2
ENG	101	Fundamentals of English	3	0	3
			<hr/> 8	<hr/> 24	<hr/> 16
Fifth Quarter (Fall)					
RAD	201	Positioning IV	2	0	2
RAD	203	Clinical Technique V	1	24	9
RAD	225	Principles of Radiation Protection and Radiobiology	2	0	2
SOC	201	Sociology	3	0	3
PSY	101	Introduction to Psychology	3	0	3
			<hr/> 11	<hr/> 24	<hr/> 19
Sixth Quarter (Winter)					
RAD	210	Positioning V	2	0	2
RAD	212	Clinical Technique VI	1	24	9
RAD	214	Equipment and Maintenance	2	0	2
RAD	215	A Survey of Medical and Surgical Diseases	2	0	2
ENG	102	Composition	3	0	3
			<hr/> 10	<hr/> 24	<hr/> 18

			Hrs. Per Week Class	Lab	Credit Hrs.
Seventh Quarter (Spring)					
RAD	221	Positioning VI—Opaque Media	2	0	2
RAD	223	Clinical Technique VII	1	24	9
ENG	103	Report Writing	3	0	3
			<hr/>	<hr/>	<hr/>
			6	24	14
Eighth Quarter (Summer)					
RAD	231	Positioning VII—Comprehensive Review	2	0	2
RAD	233	Clinical Technique VIII	1	24	9
RAD	213	Advanced Radiographic Technique	3	0	3
ENG	204	Oral Communications	3	0	3
			<hr/>	<hr/>	<hr/>
			9	24	17

DIVISION OF HOSPITALITY EDUCATION

The following areas of study are included in the school of Hospitality Education:

Culinary Technology: Associate of Culinary Technology—
Technical Diploma

Culinary Arts: Diploma awarded for one year program

Hotel and Restaurant Management—A.A.S. degree conferred.

The areas of study in the Division of Hospitality Education are generally seven quarters in duration and will require from twenty to thirty hours per week of course work.

In addition to regular classroom work each student will be required to spend additional time on outside work assignments. This will normally be conducted in the summer quarter.

SPECIFIC ENTRANCE REQUIREMENTS FOR HOSPITALITY PROGRAMS

1. General college admission requirements
2. Must be in acceptable condition of physical and mental health to meet state requirements for food handling certificate
3. Entry into Culinary Technology requires successful completion of the Culinary Arts program or approval of the Culinary Department.

CULINARY TECHNOLOGY

This curriculum will award a one year technical diploma and a two year Associate of Culinary Technology—Technical Diploma. A student may terminate at the completion of four quarters of work and receive a Culinary Arts diploma only.

To achieve these objectives, these programs are directed toward supplying through a combination of courses, in-house observation and experience, on-the-job training and the knowledge and skills which will contribute to the success of the future graduate.

The courses are designed to give the student an understanding as well as an appreciation of fine and classical cuisine and to help them establish and develop high standards of workmanship.

Occupational Opportunities

The graduate may find employment with hotels, restaurants, clubs, airlines and steamships, as well as industrial and institutional outlets. The graduate would typically be engaged in a progression of positions from cook to station chef and sous chef, culminating in the position of Executive Chef.

Culinary Technology (7 Quarters)
Culinary Arts (1st 4 Quarters)

			Hrs. Per Week		Prac.	Credit
			Class	Lab	Lab	Hrs.
First Quarter (Fall)						
CSP	101	Food Preparation I	3	0	9	6
CSP	107	Food Service Equipment Orientation	1	2	0	2
HRM	101	Hospitality Orientation	3	0	0	3
ENG	101	Fundamentals of English	3	0	0	3
MAT	109	Business Math, Hospitality Indus.	5	0	0	5
			<u>15</u>	<u>2</u>	<u>9</u>	<u>19</u>
Second Quarter (Winter)						
CSP	103	Food Preparation II	3	0	12	7
CSP	109	International Cuisine	2	2	0	3
HRM	108	Food Cost Control	3	0	0	3
HRM	104	Food Purchasing I	3	0	0	3
ENG	102	Composition	3	0	0	3
			<u>14</u>	<u>2</u>	<u>12</u>	<u>19</u>
Third Quarter (Spring)						
CSP	106	Food Preparation III	3	0	12	7
CSP	108	Menu Planning	1	2	0	2
HRM	109	Food Purchasing II	3	0	0	3
ENG	206	Business Communications	3	0	0	3
			<u>10</u>	<u>2</u>	<u>12</u>	<u>15</u>
Fourth Quarter (Summer)						
CSP	110	Supervised Work Experience	2	0	40	6
Fifth Quarter (Fall)						
CSP	114	Gardemanger	2	0	3	3
CSP	201	Food Preparation IV	3	0	12	7
CSP	203	Dining Room	1	2	0	2
BUS	110	Business Machines	1	0	3	2
ENG	204	Oral Communications	3	0	0	3
			<u>10</u>	<u>2</u>	<u>18</u>	<u>17</u>
Sixth Quarter (Winter)						
CSP	208	Convenience Foods	1	2	0	2
CSP	210	Food Preparation V	3	0	12	7
HRM	213	Food Service Sanitation	3	0	0	3
HRM	215	Beverage Cost Control	3	0	3	4
SOC	201	Sociology	3	0	0	3
			<u>13</u>	<u>2</u>	<u>15</u>	<u>19</u>
Seventh Quarter (Spring)						
CSP	207	Food Preparation VI	3	0	12	7
CSP	214	Wine Appreciation	1	2	0	2
HRM	209	Personnel Management				
		Hospitality Industry	3	0	0	3
PSY	206	Applied Psychology	3	0	0	3
			<u>10</u>	<u>2</u>	<u>12</u>	<u>15</u>

HOTEL AND RESTAURANT MANAGEMENT

This curriculum covers the many facets of the Hotel and Foodservice industries. The study is made from both the academic and “hands on” aspects.

The student gains Hotel experience in the Campus Lodge and foodservice experience in laboratory exercises to which the faculty, staff, and students are invited. Practical industry experience is provided by means of “The Summer Work Experience.”

Occupational Opportunities

The total curriculum will provide the foundation for a graduate to enter the hospitality industry in a training capacity. After an application of the knowledge gained from the curriculum and further training on the job, the individual will be able to assume the responsibilities of management as: general manager, catering manager, food and beverage controller, restaurant manager, assistant manager, front office manager, director of sales, purchasing agent, or executive housekeeper.

Hotel and Restaurant Management

			Hrs. Per Week		Credit
			Class	Lab	Hrs.
First Quarter (Fall)					
HRM	101	Hospitality Orientation	3	0	3
CSP	100	Food Preparation I	3	6	5
CSP	107	Food Service Equipment Orientation	1	2	2
BUS	110	Business Machines	1	3	2
ENG	101	Fundamentals of English	3	0	3
MAT	109	Business Math, Hospitality Indus.	5	0	5
			<u>16</u>	<u>11</u>	<u>20</u>
Second Quarter (Winter)					
HRM	108	Food Cost Control	3	0	3
HRM	104	Food Purchasing I	3	0	3
CSP	102	Food Preparation II	3	6	5
BUS	120	Accounting I	5	2	6
ENG	102	Composition	3	0	3
			<u>17</u>	<u>8</u>	<u>20</u>
Third Quarter (Spring)					
HRM	106	Front Office Procedures/Hotel Accounting	5	2	6
HRM	109	Food Purchasing II	3	0	3
CSP	104	Food Preparation III	3	9	6
BUS	115	Business Law	3	0	3
ENG	206	Business Communications	3	0	3
			<u>17</u>	<u>11</u>	<u>21</u>
Fourth Quarter (Summer)					
HRM	110	Supervised Work Experience	2	40	6

			Hrs. Per Week Class	Lab	Credit Hrs.
Fifth Quarter (Fall)					
HRM	207	Laws of Innkeeping	5	0	5
HRM	208	Supervisory Housekeeping	3	2	4
HRM	211	The Financial Ingredient in Food Service Management	3	2	4
ECO	105	Introduction to Economics	5	0	5
EDP	104	Introduction to Business Data Processing	2	2	3
ENG	204	Oral Communication	3	0	3
			<u>21</u>	<u>6</u>	<u>24</u>
Sixth Quarter (Winter)					
HRM	206	Business Management in Hotel-Motel Restaurants	3	0	3
HRM	210	Supervisory Housekeeping III	0	2	1
HRM	215	Beverage Cost Control	3	3	4
HRM	214	Layout and Design I	1	2	2
HRM	213	Food Service Sanitation	3	0	3
BUS	229	Taxes	3	2	4
SOC	201	Sociology	3	0	3
			<u>16</u>	<u>9</u>	<u>20</u>
Seventh Quarter (Spring)					
HRM	209	Personnel Management Hospitality Industry	3	0	3
HRM	212	Sales Promotion and Advertising in Hotels & Restaurants	2	2	3
HRM	216	Layout and Design II	2	4	4
HRM	217	Supervisory Housekeeping III	0	2	1
BUS	247	Insurance	5	0	5
PSY	206	Applied Psychology	3	0	3
			<u>15</u>	<u>8</u>	<u>19</u>



DIVISION OF VOCATIONAL- INDUSTRIAL EDUCATION

The following areas of study are included in the Division of Vocational-Industrial Education:

TECHNICAL DIPLOMA AWARDED

Tool and Die Making

DIPLOMA AWARDED

Air Conditioning, Heating and Refrigeration

Automotive Mechanics

Building Construction

Diesel Engines and Hydraulic Systems

Machine Shop

Welding

The division will offer a variety of courses on a four quarter basis. The areas of study reflect the employment opportunities in the western part of North Carolina. These curriculums require one full year for completion. If a student elects to enroll in the division through evening school because of his work load, the time required for completion will be doubled. The evening division will offer up to sixteen hours per week in a particular area of study. The full-time schedule will require approximately thirty hours per week.

The student enrolled in the division will spend most of his time in the shop working under actual industrial conditions. The rest of the time will be in the classroom and laboratory in related subjects. The division will require each student to demonstrate an ability to do work in his particular trade. Emphasis will be placed on becoming proficient in the use of machines, instruments, and other equipment related to a particular area of work.

Certain courses will be required of every student irrespective of his curriculum. These courses will enhance the student's ability to become a total individual with a proper attitude toward his work. A thorough understanding of the American system of economics as it relates to the free enterprise system and corporate structure will be required of every student. To accomplish this the vocational student will elect to take either BUS 1103, Small Business Operations or ECO 1107, Consumer Economics.

Tool & Die Making Entrance Requirements

To advance from the Machine Shop curriculum to the Tool and Die Making curriculum the student must be a graduate of the Machine Shop program and have obtained a grade of "B" or better in MES 1103, MES 1104, MAT 1104 and MAT 1123. Any exceptions to these requirements will be decided by a committee of the following:

1. Chairperson of Tool & Die Making Department
2. Chairperson of Machine Shop Department
3. Appropriate mathematics instructor.

AIR CONDITIONING, HEATING AND REFRIGERATION

In recent years the use of air conditioning and refrigeration equipment has increased tremendously. Practically all new building construction for business and commercial use have “all year” comfort systems. Many houses now have air conditioning and the trend is toward greater use of “all year” systems of cooling and heating. The food industry is requiring greater use of refrigeration systems in freezing, storage, and display of products. With this great upswing in the use of air conditioning and refrigeration equipment, a greater demand is made on trained personnel to install, operate, maintain and service this equipment.

This curriculum is designed to give the students practical knowledge that will enable them to become capable service men in the industry. The principal objective has been to outline the required technical and related instruction to enable them to understand the basic principles involved in the construction, operation, and maintenance of equipment. Job opportunities exist with companies that specialize in air conditioning, automatic heating, sheet metal and commercial refrigeration installation and service. The service man is employable in areas of sales, maintenance, installation and in the growing field of truck and trailer refrigeration.

Occupational Opportunities

The air conditioning, heating and refrigeration mechanic installs, inspects, maintains, services and repairs domestic and commercial equipment, connects motors, compressors, temperature controls, humidity controls and circulating fans to control panels, tests systems, observes pressure and vacuum gauges and adjusts controls to insure proper operation.

Air Conditioning, Heating and Refrigeration

			Hrs. Per Week			Credit Hrs.
			Class	Lab	Shop	
First Quarter (Fall)						
AHR	1121	Fundamentals of Refrigeration: Domestic	3	0	12	7
MAT	1101	Fundamentals of Mathematics	5	0	0	5
ELC	1117	Basic Electricity	3	2	0	4
ENG	100	Reading Comprehension	1	2	0	2
WLD	1101	Basic Welding	1	2	0	2
			13	6	12	20

			Hrs. Per Week			Credit
			Class	Lab	Clinic	Hrs.
Second Quarter (Winter)						
AHR	1122	Fundamentals of Refrigeration: Commercial	3	0	12	7
MAT	1103	Geometry	3	0	0	3
BPR	1108	Basic Mechanical Blueprint Reading	1	2	0	2
ELC	1118	Applied Electricity	3	2	0	4
ENG	1102	Communication Skills	3	0	0	3
			13	4	12	19
Third Quarter (Spring)						
AHR	1123	Principles of Air Conditioning	4	0	9	7
AHR	1124	Principles of Heating: Fuels and Burners	3	0	6	5
BRP	1116	Blueprint Reading: Air Conditioning	2	2	0	3
PSY	1101	Human Relations	3	0	0	3
			12	2	15	18
Fourth Quarter (Summer)						
AHR	1126	All Year Comfort Systems and A.C. Servicing	4	0	9	7
AHR	1127	Duct Construction and Maintenance	3	0	6	5
BUS	1103	Small Business Operations	3	0	0	3
PHY	1101	Applied Science I	3	2	0	4
			13	2	15	19



AUTOMOTIVE MECHANICS

This is a one-year program providing thorough training in the theoretical as well as manual skills in servicing, testing, and diagnosing. All phases of the electrical system, and the power plant, the power train, and the hydraulic braking system will be studied.

The courses are arranged in a sequence that gives the student the required technological and special courses as they are needed to coordinate laboratory experiences.

Emphasis is placed on the mechanical parts and operation of the various automobile units. Trouble shooting and servicing of the live project are also stressed.

Occupational Opportunities

Auto mechanic, truck and bus mechanic, shop foreman, maintenance supervisor, dealer service manager, sales technician, factory representative, and experimental lab work are among those occupational opportunities awaiting graduates of the Automotive Mechanics curriculum.

Automotive Mechanics

			Hrs. Per Week			Credit Hrs.
			Class	Lab	Shop	
First Quarter (Fall)						
AUT	1101	Internal Combustion Engine	3	0	12	7
ENG	100	Reading Comprehension	1	2	0	2
MAT	1101	Fundamentals of Mathematics	5	0	0	5
PSY	1101	Human Relations	3	0	0	3
			12	2	12	17
Second Quarter (Winter)						
AUT	1102	Engine Electrical and Fuel Systems	5	0	12	9
BPR	1108	Basic Mechanical Blueprint Reading	1	2	0	2
ENG	1102	Communication Skills	3	0	0	3
PHY	1101	Applied Science I	3	2	0	4
			12	4	12	18
Third Quarter (Spring)						
AUT	1121	Braking Systems	2	0	3	3
AUT	1123	Automotive Chassis and Suspension Systems	3	0	9	6
PHY	1102	Applied Science II	3	2	0	4
WLD	1101	Basic Welding	1	2	0	2
			9	4	12	15
Fourth Quarter (Summer)						
AUT	1124	Automotive Power Train Systems	1	0	9	4
AUT	1125	Automotive Services	3	0	9	6
AUT	1128	Automotive Air Conditioning	2	0	3	3
BUS	1103	Small Business Operations	3	0	0	3
(ECO	1107	Consumer Economics)	(3)	(0)	(0)	(3)
			9	0	21	16

BUILDING CONSTRUCTION

This curriculum is designed to subject a student to the fundamentals of carpentry work and the basic procedures of cabinet making. Students will begin with hand tools and progress into the woodworking machines found in a cabinet shop. The carpentry work will begin with the masonry foundation and progress to the finished building. Some consideration will be given to industrial buildings as compared to residential buildings.

Each student will have an opportunity to review the work of other skilled tradesmen such as plumbing and heating, electrical, masonry, and painting finishing.

With the tremendous population growth and expanding industry this area will serve a need that has unlimited potential.

Occupational Opportunities

Occupational opportunities will be found with private builders, residential builders, general contractors, cabinet shops, and in many industries that maintain their own buildings.

Building Construction

			Hrs. Per Week			Credit Hrs.
			Class	Lab	Shop	
First Quarter (Fall)						
CAR	1102	Cabinetmaking I	5	0	15	10
BPR	1107	Blueprint Reading:				
		Construction Trades	1	2	0	2
ENG	100	Reading Comprehension	1	2	0	2
MAT	1101	Fundamentals of Mathematics	5	0	0	5
			12	4	15	19
Second Quarter (Winter)						
CAR	1101	Carpentry I	5	0	6	7
CAR	1104	Cabinetmaking II	0	0	9	3
BPR	1109	Blueprint Reading:				
		Construction Trades	1	2	0	2
ENG	1102	Communication Skills	3	0	0	3
MAT	1103	Geometry	3	0	0	3
			12	2	15	18
Third Quarter (Spring)						
CAR	1103	Carpentry II	0	0	21	7
DFT	1127	Construction Trades: Drafting I	2	2	0	3
PSY	1101	Human Relations	3	0	0	3
			5	2	21	13
Fourth Quarter (Summer)						
CAR	1105	Supervised Work Experience	2	0	24	10
BUS	1103	Small Business Operations	3	0	0	3
DFT	1128	Construction Trades: Drafting II	2	2	0	3
			7	2	24	16

DIESEL ENGINES AND HYDRAULIC SYSTEMS

This curriculum is constructed to give each student a foundation in diesel engine and hydraulic systems and go into the areas of electrical, steering, fuel, suspension, cooling, and lubricating. The various types of power trains will be considered.

The area of heavy equipment maintenance offers a wide variety of occupational opportunities. This program will give a student the basic knowledge and the industry will provide the opportunity to apply this knowledge in a specific area of work. Preventive maintenance for all types of heavy equipment will be stressed throughout the entire course. Some knowledge of the operation of heavy equipment will be presented.

Occupational Opportunities

Opportunities in heavy equipment maintenance will be found within dealerships, trucking companies, public transportation companies, general contractors, farm implement dealers, and industries that maintain heavy equipment.

Diesel Engines and Hydraulic Systems

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
First Quarter (Fall)						
HEV	1101	Diesel Engine Theory and Practice	3	0	12	7
ENG	100	Reading Comprehension	1	2	0	2
MAT	1101	Fundamentals of Mathematics	5	0	0	5
MEC	1101	Elementary Hydraulic Principles	2	3	0	3
			11	5	12	17
Second Quarter (Winter)						
HEV	1102	Diesel-Electrical, Fuel, Lubricating and Cooling Systems	5	0	12	9
PHY	1101	Applied Science I	3	2	0	4
WLD	1102	Basic Welding	2	0	3	3
			10	2	15	16
Third Quarter (Spring)						
HEV	1103	Diesel-Hydraulic Systems, Steering, Suspension, Braking, Injector Testing and Servicing	3	0	15	8
BUS	1103	Small Business Management	3	0	0	3
(ECO	1107	Consumer Economics)	(3)	(0)	(0)	(3)
PHY	1102	Applied Science II	3	2	0	4
			9	2	15	15
Fourth Quarter (Summer)						
HEV	1105	Diesel Service and Repair	3	0	9	7
HEV	1107	Power Train Systems	2	0	6	4
ENG	1102	Communication Skills	3	0	0	3
PSY	1101	Human Relations	3	0	0	3
			11	0	15	17

MACHINE SHOP

The two objectives of the machine shop course are to help students now in machine shops get a solid working knowledge of overall machine shop practice and to provide students not working in machine shops with a broad understanding of machine tools and shop practices. This course presents in a practical manner the details of such basic shop operations as bench work, layout, drilling, lathe work, milling, shaping, planing, broaching, and grinding. The course also covers the operating principles of machine tools, the use of measuring and testing instruments, and blueprint reading.

Occupational Opportunities

Occupational opportunities are found in metal working factories, federal government installations, machine shops, maintenance shops, utility companies, and a wide variety of mechanical and technical activities.

Machine Shop

			Hrs. Per Week		Credit
			Class	Lab	Shop Hrs.
First Quarter (Fall)					
MES	1101	Machine Shop I	3	0	12 7
BPR	1104	Blueprint Reading: Mechanical	1	2	0 2
ENG	100	Reading Comprehension	1	2	0 2
MAT	1101	Fundamentals of Mathematics	5	0	0 5
PSY	1101	Human Relations	3	0	0 3
			13	4	12 19
Second Quarter (Winter)					
MES	1102	Machine Shop II	3	0	12 7
BPR	1105	Blueprint Reading: Mechanical	1	2	0 2
ENG	1102	Communications Skills	3	0	0 3
MAT	1103	Geometry	3	0	0 3
PHY	1100	Industrial Science	3	2	0 4
			13	4	12 19
Third Quarter (Spring)					
MES	1103	Machine Shop III	3	0	12 7
BPR	1106	Blueprint Reading: Mechanical	1	2	0 2
BUS	1103	Small Business Operations	3	0	0 3
(ECO	1107	Consumer Economics)	(3)	(0)	(0) (3)
MAT	1104	Trigonometry	3	0	0 3
MEC	1115	Treatment of Ferrous and Non-Ferrous Metals	1	0	3 2
			11	2	15 17
Fourth Quarter (Summer)					
MES	1104	Machine Shop IV	3	0	12 7
MES	1105	Introduction to Numerical Control Machines	2	2	0 3
MAT	1123	Machinist Mathematics	3	0	0 3
WLD	1101	Basic Welding	1	2	0 2
			9	4	12 15

TOOL AND DIE MAKING

The tool and die maker is the foundation man of many industries. This individual is highly skilled and possesses a tremendous depth of technical knowledge. This curriculum is designed to start an advanced machinist into the elementary requirements of tool and die making and progress into more complex dies, jigs and fixtures, gages, and other areas.

This course will enable the advanced machinist to compare the machines found in a tool and die shop with those found in the average machine shop. Each student will be required to become highly proficient in the use of each machine used in tool and die making. The related courses are designed to give the student an opportunity to advance his knowledge in mathematics, molding, drafting, and hydraulics and pneumatics. Normally, graduates of the Tool and Die Making Curriculum enter indentured apprenticeship programs, with advanced standing, in order to become a Master Tool and Die Maker. Graduates receive the Associate of Tool and Die-Technical Diploma.

Occupational Opportunities

Occupational opportunities are found in metal working industries, government installations, job shops, captive tool rooms, maintenance shops, and a wide variety of other industries using tools, dies, jigs, and fixtures for repetitive production products.

Tool and Die Making

			Hrs. Per Week			Credit Hrs.
			Class	Lab	Shop	
Fifth Quarter (Fall)						
TDM	1201	Machine Processes	3	0	12	7
DFT	1207	General Machine Drafting	2	4	0	4
MAT	1203	Trigonometry	5	0	0	5
			10	4	12	16
Sixth Quarter (Winter)						
TDM	1202	Machine Processes	3	0	12	7
ELC	1201	Electricity-Industrial	2	3	0	3
MAT	1204	Compound Angles and Curves	5	0	0	5
MEC	1203	Metallurgy	3	0	0	3
			13	3	12	18
Seventh Quarter (Spring)						
TDM	1204	Machine Processes	3	0	12	7
TDM	1205	Fundamentals of Mold Construction	3	2	0	4
BPR	1208	Blueprint Reading: Tool and Die	1	4	0	3
MEC	1209	Hydraulics and Pneumatics	3	0	0	3
			10	6	12	17
Eighth Quarter (Summer)						
TDM	1206	Machine Processes	3	0	12	7
TDM	1207	Special Problems and Molding	3	4	0	5
DFT	1209	Tool Design and Planning	2	4	0	4
			8	8	12	16

WELDING

The purpose of this course is to provide a sound training program of the skills involved in welding along with a background of technical information needed by the modern welder.

The curriculum is designed to give the student a sound foundation in the principles, practices, and usage of both gas and electric welding in modern industry. At the same time he will be given practice in the welding skills. In the shop, theory and practice are combined under the guidance of an instructor thoroughly competent in the trade. In addition, instruction is given in the technical fields related to welding under the instruction of specialists in the technical fields.

Occupational Opportunities

Typical occupational opportunities are found in motor vehicle and equipment plants, air craft industry, construction companies, independent metal working repair shops, steel mills, and self employment.

Welding

			Hrs. Per Week			Credit
			Class	Lab	Shop	Hrs.
First Quarter (Fall)						
WLD	1120	Oxyacetylene Welding and Cutting	3	0	12	7
BPR	1108	Basic Mechanical Blueprint Reading	1	2	0	2
ENG	100	Reading Comprehension	1	2	0	2
MAT	1101	Fundamentals of Mathematics	5	0	0	5
MEC	1124	Metallurgy	3	0	0	3
			<u>13</u>	<u>4</u>	<u>12</u>	<u>19</u>
Second Quarter (Winter)						
WLD	1121	Arc Welding	3	0	12	7
BPR	1117	Blueprint Reading: Welding	1	2	0	2
ELC	1119	Electricity for Welders	3	2	0	4
ENG	1102	Communication Skills	3	0	0	3
MAT	1103	Geometry	3	0	0	3
			<u>13</u>	<u>4</u>	<u>12</u>	<u>19</u>
Third Quarter (Spring)						
WLD	1112	Mechanical Testing & Inspection	1	3	0	2
WLD	1122	Commercial & Industrial Practices	3	0	9	6
WLD	1123	Inert Gas Welding	1	0	3	2
MES	1112	Machine Shop Processes	1	3	0	2
PSY	1101	Human Relations	3	0	0	3
			<u>9</u>	<u>6</u>	<u>12</u>	<u>15</u>
Fourth Quarter (Summer)						
WLD	1124	Pipe Welding	3	0	12	7
WLD	1125	Certification Practices	3	0	6	5
BUS	1103	Small Business Operations	3	0	0	3
(ECO	1107	Consumer Economics)	(3)	(0)	(0)	(3)
DFT	1126	Pattern Development & Layout	0	3	0	1
			<u>9</u>	<u>3</u>	<u>18</u>	<u>16</u>



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COURSE DESCRIPTIONS

Please examine each course description before registering and determine if all prerequisites have been met. Prerequisites shown are those courses which must be successfully completed before attempting further study. In certain cases the department chairperson may waive some prerequisites.

**Proficiency examinations will not be available for courses marked with an asterisk because of the nature of the course and in some cases safety requirements in the use of equipment. Any exceptions must be with the approval of the department chairperson.*

AHR-1121 Fundamentals of Refrigeration: Domestic (3-0-12-7)

Terminology, laws of refrigeration, absolute pressure, and absolute temperature, energy conversion units, specific heat, latent heat, and sensible heat; measurement of heat in quantity and intensity; ton of refrigeration, pressure temperature relationships, transfer of heat by conduction, convection, and radiation; elementary refrigeration, refrigeration cycle and domestic refrigeration circuits and controls. Tools, materials, and methods applicable to refrigeration; bending, and joining tubing. Safety practices will be stressed. Emphasis will be placed on domestic equipment because of its basic nature. Prerequisite: None.

AHR-1122 Fundamentals of Refrigeration: Commercial (3-0-12-7)

Commercial refrigeration installation and servicing of display cabinets, walk in coolers and freezer units and mobile refrigeration systems are studied. Catalogs are used to calculate heat loads, sizing, and matching system components and to study circuits and controls, refrigerants, oils, and methods. The American Standard Safety Code for refrigeration is studied and its principles practiced. Prerequisite: AHR 1121.

AHR-1123 Principles of Air Conditioning (4-0-9-7)

Work includes the selection of various heating, cooling, and ventilating systems, investigation and control of factors affecting air cleaning, movements, temperature, and humidity. Use is made of the psychometric chart and sling psychrometer in determining needs to produce optimum temperature and humidity control. Commercial air conditioning equipment is assembled and tested. Heating and cooling loads are estimated and duct pressures are studied. Circuit and controls, both electric and pneumatic, are applied to heating and cooling. Practical sizing and balancing of duct work is performed as needed. Prerequisite: AHR 1122.

AHR-1124 Principles of Heating: Fuels and Burners (3-0-6-5)

Fuels and burners used in supplying heat for various types of heating systems—coal, oil, natural gas, manufactured gas, liquified petroleum gas, and electricity. Experiments in equipment selection, installation, adjustments and servicing will be conducted. Warm air systems, heat emitter, electric heating, forced hot water and steam heating systems, including selection and sizing of equipment—registers, grills, furnaces, boilers, radiators, baseboards, piping, and ducts. Heating layout and specifications for an existing structure or one in blueprint stage will be prepared. Prerequisite: AHR 1123.

AHR-1126 All Year Comfort Systems and A.C. Servicing (4-0-9-7)

Emphasis is placed on the installation, maintenance, and servicing of equipment used in the cleaning, changing, humidification, dehumidification, temperature control, and distribution of air in conditioned spaces. Installation of various ducts and lines needed to connect various components is made. Shop work involves circuit and controls, testing, and adjusting of air conditioning and refrigeration equipment, and locating and correction of equipment failure. Prerequisite: AHR 1124.

AHR-1127 Duct Construction and Maintenance (3-0-6-5)

Study of various duct materials including sheet steel, aluminum, fiber glass, and plastic. Safety, sheet metal hand tools, cutting and shaping machines, fasteners and fabrication practices, layout methods, and development of duct systems. The student will study and service various duct systems and perform repairs including ducts made of fiber glass. A study is made of duct fittings, dampers and regulators, diffusers, heater and air washers, fans, insulation and ventilating hoods. Prerequisites: DFT 1116, AHR 1123, Corequisite: AHR 1126.

AUT-1101 Internal Combustion Engine (3-0-12-7)

Development of a thorough knowledge and ability in using, maintaining, and storing the various hand tools and measuring devices needed in engine repair work. Study of the construction and operation of components of internal combustion engines. Testing of engine performance; servicing and maintenance of engine block, crankshaft, pistons, valves, cams and camshafts, fuel and exhaust systems; cooling systems; proper lubrication; and methods of testing, diagnosing and repairing. Prerequisite: None.

AUT-1102 Engine Electrical and Fuel Systems (5-0-12-9)

A thorough study of the electrical and fuel systems of the automobile. Battery cranking mechanism, generator, ignition, accessories and wiring; fuel pumps, carburetors and fuel injectors. Characteristics of fuels, types of fuel systems, special tools, and testing equipment for the fuel and electrical system. Prerequisite: AUT 1101.

AUT-1121 Braking Systems (2-0-3-3)

A complete study of various braking systems employed on automobiles and light-weight trucks. Emphasis is placed on how they operate, proper adjustment, and repair. Prerequisite: PHY 1101.

AUT-1123 Automotive Chassis and Suspension Systems (3-0-9-6)

Principles and functions of the components of automotive chassis. Practical job instruction in adjusting and repairing of suspension, and steering systems. Units to be studied will be shock absorbers, springs, steering systems, steering linkage, and front end alignment. Prerequisite: PHY 1101.

AUT-1124 Automotive Power Train Systems (1-0-9-4)

Principles and functions of automotive power train systems; clutches, transmission gears, torque converters, drive shaft assemblies, rear axles and differentials. Identification of troubles, servicing, and repair. Prerequisites: PHY 1102, AUT 1123.

AUT-1125 Automotive Servicing (3-0-9-6)

Emphasis is on the shop procedures necessary in determining the nature of trouble developed in the various component systems of the automobile. Trouble-shooting of automotive systems, providing a full range of experiences in testing, adjusting, repairing and replacing. Prerequisites: AUT 1123, AUT 1121, AUT 1128.

AUT-1128 Automotive Air Conditioning (2-0-3-3) General introduction to the principles of refrigeration; study of the assembly of the components and connections necessary in the mechanisms, the methods of operation, and control; proper handling of refrigerants in charging the system. Prerequisite: PHY 1102.

BIO-101 Human Anatomy and Physiology I (4-3-5)

A study of the structure and normal functions of the human body and its systems with emphasis upon the interrelated functions of various parts and systematic processes in the development of basic physiological principles.

BIO-102 Human Anatomy and Physiology II (4-3-5)

A continuation of BIO 101. Prerequisite: BIO 101.

BIO-103 Microbiology (4-3-5)

This is a study of microorganisms, pathogenic and non-pathogenic, their relation to disease, community problems and implications for proper health techniques.

- BIO-107 Anatomy and Physiology I** (4-0-0-4)
A study of the structure and functions of the human body with cellular and topographic emphasis relating to the field of Radiologic Technology.
- BIO-108 Anatomy and Physiology II** (4-0-0-4)
A continuation of BIO 107. Prerequisite: BIO 107.
- BIO-111 Basic Life Sciences** (4-3-0-5)
A study of the normal structure and function of the human body. Elementary principles and concepts of chemistry and microbiology are included. Prerequisite: None.
- BIO-1109 Biomedical Sciences** (4-2-0-5)
This course covers the basic fundamentals and principles of anatomy and physiology, microbiology and nutrition. The relationship to these subjects in the dental assistant's performance of duties is emphasized. Prerequisite: None.
- BPR-111 Blueprint Reading** (1-2-2)
A basic study in the reading and interpretation of mechanical blueprints. Included will be a study of lines, views, dimensioning, notes and basic sketching. Prerequisite: None.
- BPR-1104 Blueprint Reading: Mechanical** (1-2-0-2)
Interpretation and reading the blueprints. Information on the basic principles of the blueprint; lines, views, dimensioning procedures and notes. Prerequisite: None.
- BPR-1105 Blueprint Reading: Mechanical** (1-2-0-2)
Further practice of interpretation of blueprints as they are used in the industry; study of prints supplied by industry; making plans of operations; introduction to drafting room procedures; sketching as a means of passing on ideas, information and processes. Prerequisite: BPR 1104.
- BPR-1106 Blueprint Reading: Mechanical** (1-2-0-2)
Advanced blueprint reading and sketching as related to detail and assembly drawings used in machine shops. The interpretation of drawings of complex parts and mechanisms for features of fabrication, construction and assembly. Prerequisite: BPR 1105.
- BPR-1107 Blueprint Reading: Construction Trades** (1-2-0-2)
How to read pictorial and orthographic drawings. Reading elevations, floor plans, symbols, notes, scales, construction types, interior and exterior details as related to a set of working drawings for a residence. Prerequisite: None.
- BPR-1108 Basic Mechanical Blueprint Reading** (1-2-0-2)
This course is designed to give the student an understanding of Industrial Blueprints. Emphasis will be placed on the study of basic lines, views, dimensions, notes, symbols, and industrial practice as related to the reading and interpreting of drawings. Prerequisite: None.
- BPR-1109 Blueprint Reading: Construction Trades** (1-2-0-2)
Advanced reading of design variations, construction materials, practices, planning, general construction specifications and heavy construction. Prerequisite: BPR 1107.
- BPR-1116 Blueprint Reading: Air Conditioning** (2-2-0-3)
Reading of working prints, exploded drawings, wiring schematics, equipment layouts, shop sketches, building codes, heat systems, standards and symbols. Prerequisite: BPR 1108.
- BPR-1117 Blueprint Reading: Welding** (1-2-0-2)
A thorough study of trade drawings in which welding procedures are indicated. Interpretation, use and application of welding symbols, abbreviations, and specifications. Prerequisite: BPR 1108.

***BPR-1208 Blueprint Reading: Tool and Die (1-4-0-3)**

A complete and thorough knowledge of tool and die prints will be required. Industrial prints will be used in this course. The difference between production drawings or operation sheets and tools drawing will be presented. Assembly drawings as the piece fits into place will be broken down into each detail print required. Prerequisite: DFT 1207.

BUS-100 Contemporary Business (3-2-4)

A study of business as the activating element in an enterprise system striving to achieve a combination of human, material, and capital resources to satisfy the needs and wants of people. An introduction to business from the professional (as opposed to the consumer) viewpoint. Prerequisite: None.

BUS-101 Introduction To Business (3-2-4)

A survey of the business world with particular attention devoted to the structure of the various types of business organizations, methods of financing, internal organization, and management. Prerequisite: None.

BUS-110 Business Machines (1-3-2)

A general survey of business and office machines. Students will receive training in techniques, processes, operation and application of electronic (ten-key display and printer) calculators. Prerequisite: None.

BUS-115 Business Law I (3-0-3)

A general course designed to acquaint the student with certain fundamentals and principles of business law, including contracts, negotiable instruments, and agencies. The uniform commercial code is considered whenever applicable. Prerequisite: None.

BUS-116 Business Law II (3-0-3)

Includes the study of laws pertaining to bailments; insurance; agency; employer and employee relations, business organization; real property, and workers benefits. Prerequisite: BUS 115.

BUS-117 Clerical Accounting I (5-2-6)

Basic accounting theory and applications are presented through the sequential steps of the accounting cycle. The accounting data are collected from source documents, the causative business transactions are analyzed, and the financial information is recorded and summarized. Computer processing of accounting data is introduced. Prerequisite: None.

BUS-118 Clerical Accounting II (5-2-6)

The processing of information involving transactions of a similar nature is studied as accounting subsystems. The cash receipts and payments and sales and purchases subsystems are given extensive practical emphasis in direct-entry, double-entry, and computer data processing formats in addition to the double-entry format. Prerequisite: BUS 117 or BUS 120.

BUS-120 Accounting I (5-2-6)

Principles, techniques and tools of accounting, for understanding of the mechanics of accounting. Collecting, summarizing, analyzing, and reporting information about service and mercantile enterprises, to include practical application of the principles learned. Prerequisite: None.

BUS-121 Accounting II (5-2-6)

Partnership and corporation accounting including a study of payrolls, federal and state taxes. Emphasis is placed on the recording, summarizing and interpreting data for management control rather than on bookkeeping skills. Accounting services are shown as they contribute to the recognition and solution of management problems. Prerequisite: BUS 120.

BUS-122 Accounting III**(5-2-6)**

The student is given a thorough knowledge of concepts used in the preparation and interpretation of financial statements. Each item of the income statement and balance sheet is carefully analyzed prior to making a selection as to how these items will be utilized. Prerequisite: BUS 121.

BUS-123 Finance I**(5-0-5)**

Stockmarket transaction and brokerage operations are used as a vehicle in presenting this course. Financing of business units includes individuals, partnerships, corporations, and trusts. Sources and uses of capital are covered. Prerequisites: BUS 101, BUS 120.

BUS-125 Bank Fundamentals**(5-0-5)**

The study and application of bank fundamentals. Emphasizes current trends in philosophy and position of management. Prerequisite: None.

BUS-140 Accounting Concepts for Manufacturing/Industry**(3-2-4)**

The rules of double-entry accrual accounting as related to the balance sheet equation are stressed. Emphasis on terminology for the elements of an accounting system and alternative methods of recording data is presented. Construction and interpretation of financial statements and other accounting reports are included. This course will also cover Engineering Economy. Prerequisite: None.

BUS-164 Real Estate Law**(3-0-3)**

This course is an advanced course and meets the North Carolina Real Estate Commission's requirements as one of the advanced courses necessary to qualify for the State Board Broker's Exam. Prerequisite: BUS 296.

BUS-165 Real Estate Brokerage Operations**(3-0-3)**

This is an advanced course and meets the North Carolina Real Estate Commission's requirements as one of the advanced courses to qualify for the State Broker's Exam. Topics covered include real estate brokerage, closing procedures, contracts, and trust account guidelines. Prerequisite: BUS 296.

BUS-206 Banking and Finance Credit**(5-0-5)**

The techniques of installment lending are presented. Emphasis is placed on establishing the credit, obtaining and checking information, servicing and loan, and collecting the amounts due. Other topics discussed are inventory financing, special loan programs, business development and advertising, and the public relations aspect of installment lending. Prerequisite: BUS 121.

BUS-207 Principles of Bank Operations**(3-2-4)**

The economic importance of banks; the receiving function, processing of cash items, bookkeeping operations, posting system, legal relationships with depositors, internal controls, trust services, growth of the American banking system, banking and public service. Prerequisite: BUS 120.

BUS-208 Financial Statements Analysis**(3-2-4)**

A study of analytical procedures utilized in evaluating solvency and profitability of businesses. Horizontal and vertical analysis of comparative statements are examined in the light of general economic conditions and conditions unique to the businesses being evaluated. Prerequisite: Department Permission.

BUS-209 Real Estate Finance**(3-0-3)**

This course is an advanced course and meets the North Carolina Real Estate Commission's requirements as one of the advanced courses necessary to qualify for the State Board Broker's Exam. Prerequisite: BUS 296.

BUS-222 Control Accounting**(3-2-4)**

An introductory study of accounting for departmental operations, cost systems, and budgetary controls. This course is for the non-accounting student. The student will gain an understanding of basic decentralized operations, absorption of costs, and the nature and objectives of standards and budgeting. Prerequisite: BUS 121 or BUS 140.

BUS-223 Intermediate Accounting (5-0-5)

A general investigation of the accounting principles, concepts, and procedures underlying the preparation of financial statements followed by an in-depth analysis of financial statements and managerial implications as they are derived from accounting data. Prerequisite: BUS 122.

BUS-225 Cost Accounting I (5-0-5)

Nature and purpose of cost accounting, accounting for direct labor, materials, and factory overhead; for job order and process cost systems. Prerequisite: BUS 121.

BUS-226 Cost Accounting II (5-0-5)

A study of standard cost procedures; selling, administrative and distribution costs; budgeting and management use of cost data. Prerequisite: BUS 225.

BUS-229 Taxes I (3-2-4)

A study of federal and state personal income taxes, payroll taxes, sales and use taxes. Prerequisite: BUS 121 or HRM 105.

BUS-230 Taxes II (3-2-4)

A study of federal and state partnership and corporate income taxes. Prerequisite: BUS 229.

BUS-231 Government and Business (3-0-3)

A discussion of the extent to which government regulates business and the economy along with the implications and problems with which students, as citizens and voters, must be familiar. Covered are such regulations as Interstate Commerce Act, Sherman Act, Clayton Act, Pure Food and Drug Act, The Federal Fair Labor Standards Act, and the National Labor Relations Act. Prerequisite: ECO 104.

BUS-233 Personnel Management and Supervision (5-0-5)

This course presents the fundamental principles and successful practices in the organization and supervision of employees. A study of critically important and practical concepts of modern day supervision is presented. Results of modern social-psychological research and case studies are employed to demonstrate and emphasize leadership and motivation in the job situation. Prerequisite: None.

BUS-234 Introduction to Management (3-2-4)

The student is given a thorough introduction to basic theories of management and techniques of applying these in a real situation. Prerequisite: None.

BUS-235 Business Organization & Management (3-2-4)

Principles of business organization, administration and management covering management theory including planning, staffing, controlling, coordinating, directing, financing, and budgeting. An overview of developing and engineering the product, methods analysis and control, principles and administration of industrial relations and financing controls as interrelated functions of management are stressed. Prerequisite: BUS 101.

BUS-236 Small Business Management (3-0-3)

A study of the principles of management as they relate to small businesses. The problems of small businesses will be stressed along with the possible solutions and how to alleviate the most common causes of business failures. Prerequisite: None.

BUS-237 Advertising (5-0-5)

A study of the role of advertising in the American economy, considering the importance in the business operations with resulting profits and business success. The instructions in the techniques of advertising and display. Prerequisite: BUS 239.

BUS-238 Consumer Behavior (3-2-4)

An examination of motivational and behavioral approaches to understanding consumer behavior in buying goods and services and the business-management problems relating to buyer decisions. Prerequisite: BUS 239.

- BUS-239 Introduction to Marketing** (5-0-5)
A general survey of the field of marketing, with a detailed study of the function, policies, and institutions involved in the marketing process. Prerequisite: None.
- BUS-240 Channels of Distribution** (5-0-5)
A study of the characteristics, economic aspects, regulations, services, and problems relating to systems of physical distribution. Prerequisite: BUS 239.
- BUS-241 Retailing** (5-0-5)
A study of the role of retailing in the economy including development of and changes occurring in the retail structure, functions performed including merchandise controls and inventory records, principles governing effective operation and managerial problems resulting from current economic and social trends. Prerequisite: BUS 239.
- BUS-247 Insurance** (5-0-5)
A presentation of the basic principles of risk insurance and their application. A survey of the various types of insurance is included. Prerequisite: BUS 116 or HRM 102.
- BUS-248 Marketing Research** (5-0-5)
A study of the role of Marketing Research in the American economy to include techniques for maximizing performance within marketing channels. Prerequisite: BUS 239.
- BUS-249 Inventory Control** (5-0-5)
A study of acquisition, control and distribution of inventories to include: ordering, control, and distribution techniques which may prove profitable in a marketing venture. Prerequisite: BUS 121.
- BUS-251 Postal History and Organization** (3-0-3)
Postal developments from ancient civilizations to the Reorganization Act of 1970 and today.
- BUS-252 Mail Processing I** (3-0-3)
Fundamentals of processing mail, including classes and priorities of mail, casing and separation, layout of equipment, receipt of mail and service standards. Retailing postal products and services.
- BUS-255 Postal Employee** (3-0-3)
Personnel administration, employee benefits and programs.
- BUS-256 Postal Labor Relations** (3-0-3)
Brief history of the labor movement, postal unions, administration of the National Agreements.
- BUS-257 Postal Rural Delivery** (3-0-3)
Principles of delivery, route inspections and adjustments, types of routes, mail counts, duties and responsibilities.
- BUS-258 Postal City Delivery & Collection** (3-0-3)
Collection schedules, methods of delivery, route adjustments and inspections.
- BUS-259 Postal Finance** (3-0-3)
Postal accounting, audit and budget procedures.
- *BUS-266 Professional Sales Techniques** (3-0-3)
A study of the fundamentals of salesmanship in retail, wholesale, and specialty selling. Theory techniques in selling and practice demonstrations will be utilized. Emphasis will be placed on prospecting for sales, planning selling strategies, sales presentation and closing techniques. Prerequisite: BUS 239.
- BUS-269 Auditing** (3-2-4)
Principles of conducting audits both internal and external, with special emphasis on the control and safeguarding of assets and properly recording liabilities. Prerequisite: BUS 223.

BUS-296 Real Estate Fundamentals for Salespersons (6-0-6)

An introductory-level course in real estate practices and principles, basic real estate law, finance, construction, and the role of government in real estate. This course is designed to provide the student with the information necessary to qualify for the "North Carolina Real Estate Salesman's Exam." Prerequisite: None.

BUS-1103 Small Business Operations (3-0-0-3)

An introduction to the business world, problems of small business operation, basic business law, business forms and records, financial problems, ordering and inventorying, layout of equipment and offices, methods of improving business, and employer-employee relations. Prerequisite: None.

CAR-1101 Carpentry I (5-0-6-7)

This course will be presented as an introduction to the first steps necessary from the finished foundation to the complete framing of a building. Methods of framing entire walls before erection will be presented. Motion saving methods and overall planning of time will be presented. Size of nails and identification of nails will be studied. Prerequisite: None.

CAR-1102 Cabinetmaking I (5-0-15-10)

This course is designed to introduce the student to hand tools used in a cabinet shop. After several projects with hand tools the student will be placed on each machine. Various types of wood will be used and identification of the various types of wood will be required. Prerequisite: CAR 1101.

CAR-1103 Carpentry II (0-0-21-7)

In this course the student will study all types of roof construction. Each student will be required to cut and assemble all types of rafters. Students will be required to put on all types of shingles and prepare a roof for "built up construction." The students will also be required to study the framing square in order to figure the length of rafters and cutting of all types of rafters and truss construction. Prerequisite: CAR 1102.

CAR-1104 Cabinetmaking II (0-0-9-3)

This course will go into the necessary framing for cabinet work. Students will be presented a study of built-in cabinets and pre-constructed cabinet work. Built-in book cases and special work will be presented. Prerequisite: CAR 1102.

CAR-1105 Supervised Work Experience (2-0-24-10)

This course will present the student with the finish work of carpentry. Types of baseboard, moulding, door facing, and framing and finishing staircases will be presented. Each student will be subjected to a series of projects under close supervision of the faculty that will require use of all finishing tools normally used by a carpenter. Clean work and self pride will have an emphasis in this course. Prerequisites: CAR 1103, CAR 1104.

CHM-100 Introduction to Chemistry (3-3-4)

For students who need additional work in General Chemistry. An introduction to General Chemistry which is essential for understanding organic and biological chemistry. Laboratory work emphasizes these basic concepts.

CHM-101 Fundamentals of Physiological Chemistry (3-2-4)

Emphasis is placed on physiological aspects of inorganic chemistry, organic chemistry, and biochemistry. Theoretical topics are dealt with briefly as an aid to understanding bodily processes. Prerequisite: Admission requirements.

CHM-102 Engineering Chemistry (2-2-3)

Chemical principles related to the Engineering Technology student will be emphasized. This includes the chemistry of elements and compounds and their relationship to the engineering field. Matter, energy, chemical reactions, water and air pollution are also included. Prerequisite: Registration in Engineering Technology program.

CHM-103 MLT Chemistry I (3-2-4)

This course involves basic chemical principles needed for understanding atomic structure, solution concentrations, chemical reactions, acids, bases, salts, weights and measurements.

CHM-104 MLT Chemistry II (3-2-4)

This is a study of application of physiological chemistry in relation to diagnosis in the laboratory. Prerequisite: CHM 103.

CHM-111 General Chemistry (3-4-5)

An introductory chemistry course involving chemical terminology, atomic structure, properties of some elements, and the function of the periodic table. Properties of compounds and mixtures are studied as are types of chemical reactions. Laboratory work consists of various inorganic reactions and preparations. Corequisite: MAT 100.

CHM-112 General Chemistry (3-4-5)

This course involves a study of the physical and chemical properties of substances, chemical changes, elements, compounds, gases, chemical combinations, weights and measurements. Prerequisite: CHM 111.

CHM-113 General Chemistry (3-4-5)

A study of the properties of elements not covered in CHM 112 and a study in greater depth of the combining properties of the elements including equivalent weights. Laboratory work includes chemical reactions and an investigation of properties of solutions. Prerequisite: CHM 112.

CHM-121 Qualitative Analysis (3-6-5)

Qualitative analysis is the branch of analytical chemistry which determines the presence or absence of elements, radicals, or ions in an unknown substance or mixture of substances. Students will be expected to analyze and study unknown substances to determine which ions are present. Analytical operations, the system of analysis, principles of qualitative analysis, analysis for anions, analysis for cations, analysis of alloys, salts, and commercial substances constitute major areas of study. Prerequisite: CHM 113.

CHM-222 Quantitative Chemical Analysis (3-6-5)

Emphasis is placed on developing laboratory techniques employed in the volumetric analysis of acids and bases. The students will become thoroughly familiar with the principles and procedures of neutralization titration. Classroom work will emphasize the stoichiometric calculations involved in interpreting the results of analysis. Laboratory work will consist of percentage analysis of selected substances. Prerequisite: CHM 121.

***CHM-223 Quantitative Chemical Analysis (2-9-5)**

The more complex types of quantitative analysis. Special emphasis on the theory of oxidation-reduction and gravimetric analysis. Instrumental analysis is introduced and use of modern analytical devices is stressed. The student will become familiar with the principles of redox reaction, ionization constants and pH of solutions. Stress is placed on the stoichiometric calculations of quantitative chemical analysis. Classroom work complements quantitative determinations in the laboratory. Prerequisite: CHM 222.

CHM-231 Organic Chemistry (2-6-5)

Nomenclature, structure, preparation, properties, and reactions of aliphatic organic compounds. Laboratory work will emphasize techniques. Prerequisite: CHM 223.

CHM-232 Organic Chemistry (3-6-5)

The nomenclature, structure preparation, properties, and reactions of aromatic organic compounds. Laboratory work emphasizes techniques and involves preparation and analysis of selected organic compounds. Prerequisite: CHM 231.

***CHM-241 Industrial Chemical Analysis (3-9-6)**

An industrial laboratory situation is simulated. Principles and techniques learned in previous quarters are utilized in solution of problems common to local industry. It will be the responsibility of the instructor to determine and submit in outline form a program of suitable scope and sequence of topics which he will work out from consultation with his local advisory committee, representing the industry. Prerequisites: CHM 223, CHM 231.

***CHM-242 Industrial Chemical Analysis (3-9-6)**

An industrial laboratory situation is maintained and the emphasis on instrumentation is expanded. Problems of industrial quality control. Plant visitations. Prerequisite: CHM 241.

CHM-244 Environmental Chemistry (3-2-4)

This study is intended to demonstrate the existence of a deep, underlying core of principles to which all aspects of environmental science can contribute and from which each can draw. Our aim is to shift the emphasis toward an integrated consideration of five fundamental categories of variables: energy, matter, space, time and diversity. Efficiency of energy transfer in systems will be of major importance. Finally, many practical problems in environmental science are reaching crisis dimensions for all of mankind, and the attention of our most talented youth should be directed to them. Prerequisite: CHM 113.

CIV-101 Surveying (2-6-4)

Theory and practice of plane surveying, including taping, differential and profile leveling, compass work, earthwork computations, transit, stadia and transit-tape surveys. Prerequisite: MAT 100.

CIV-102 Surveying (2-6-4)

Triangulation of ordinary precision; use of plane table; calculation of areas of land; cross sections, earth work computations, and mass diagrams; land surveying. Prerequisite: CIV 101, MAT 102.

CIV-103 Surveying (2-6-4)

Route surveys by ground and aerial methods; simple, compound, reverse, parabolic and spiral curves; geometry design of highways; highway surveys and plans. Prerequisite: CIV 101, MAT 102.

CIV-114 Statics (5-0-5)

Forces, resultants, and types of force systems; moments, equilibrium of coplanar forces by analytical and graphic methods; stresses and reactions in simple structure; equilibrium of forces in space; static and kinetic friction. Corequisite: MAT 102.

CIV-202 Properties of Soils (2-2-3)

Study of soil types and their physical properties; mechanical analysis and tests of soils; techniques and subsurface investigation; earth pressure theories; bearing capacity; stability of slopes; hydrostatics of ground water; methods of compaction and consolidation. Prerequisite: CIV 220.

CIV-204 Surveying (2-6-4)

Aerial photogrammetry; applications of aerial surveys; building and road construction surveying; lines and grades for foundation layout, building construction, bridge layout, sewer and pipeline surveys, further study and application of advanced surveying techniques, instruments and astronomical observations. Prerequisite: CIV 103.

CIV-216 Strength of Materials (5-0-5)

Fundamental stress and strain relationship; centroids and moments of inertia; torsion, shear and bending moments; stresses and deflection in beams; columns and combined stresses. Prerequisite: CIV 114.

CIV-217 Construction Methods and Equipment (4-4-6)

Excavating methods and equipment used in building and highway construction; pile driving; construction techniques and equipment used in reinforced concrete buildings, bridges, erection methods and equipment of structural steel buildings and bridges; carpentry in house and heavy timber construction; construction safety. Field inspection trips.

CIV-218 Plain Portland Concrete (2-2-3)

Study and testing of the composition and properties of concrete including cementing agents, aggregates, admixtures, and air-entertainment; design and proportioning of concrete mixes to obtain pre-determined strengths and properties; methods of placing and curing concrete; standard control tests of concrete. Prerequisite: CIV 216.

CIV-219 Steel and Timber Construction (4-4-6)

Analysis and basic design of steel beams, tension members, columns, and riveted, high strength bolted, welded connection; study of plate girders, industrial building roofs, continuous spans, lightweight steel construction; use of American Institute of Steel Construction Manual; introduction to rigid frames and plastic design in steel. Design of timber members and their connections. Field inspection trips. Prerequisite: CIV 216. Corequisite: CIV 225.

CIV-220 Construction Planning (4-0-4)

Analysis of construction plant layout requirements and contractor's organization for building and highway projects. Construction scheduling; project control and supervision; coordinating trades on building construction. Operation, charts and practical application of Critical Path Methods (CPM) for construction planning, scheduling, and "time-cost" determination. Prerequisite: CIV 217.

CIV-221 Asphalt (2-2-3)

Study and testing of asphaltic material, asphalt pavements and surface treatments. Study will include properties, testing, production, laydown, and design of asphalt in application to bridges, hydraulics, roadways and appurtenances. Prerequisites: None.

CIV-225 Estimates, Codes and Specifications (4-4-6)

Interpretation of working drawings of timber, steel, and reinforced concrete structures and highways; bidding procedures from preliminary survey to final bid; study of the North Carolina Building Code and the Occupational Safety & Health Act (OSHA); practical costs and estimates problems; specifications. Prerequisite: CIV 220.

CIV-228 Contracts, Engineering Relations and Ethics (2-2-3)

Study of the Engineers' Codes. Brief coverage of other fields of engineering technology. Ethical relations with employer, employees, clients, other technicians. Class discussions of situations involving engineering law and ethics. Prerequisite: Senior status.

CIV-229 Branches of Civil Engineering Technology (3-3-4)

Study of hydraulics, dam design, hydrology, water systems, design and layout, sewage treatment. Field trips. Prerequisite: Senior status.

CJC-101 Introduction to Criminal Justice (5-0-5)

This course is designed to provide the student with a philosophy of criminal justice with its legal limitations in our society and the primary responsibilities of the various agencies of the criminal justice system. The basic processes of criminal justice are discussed. The student receives an orientation relative to job opportunities. Prerequisite: None.

CJC-102 Introduction to Criminology (5-0-5)

A general course designed to introduce the student to the causation of crime and criminal deviant behavior. The course presents the problem of crime historically and the aspects of contemporary efforts to meet the social problems caused by criminal behavior. Prerequisite: None.

CJC-105 Introduction to Correction	(4-0-4)
Course examines the functional position of American corrections in the criminal justice system; the interrelationship of correction with the police and the courts. The history of corrections is considered as a societal response to deviance. Emphasis is given to the functioning of corrections as part of the criminal justice system and the need for cooperation between the various facets of the system. Court and institutional administration and the legal rights of inmates are covered. Prerequisite: None.	
CJC-106 Probation and Parole	(3-0-3)
Institutional and non-institutional treatment of the offender considering modern philosophy and methods in treatment of adult criminals and juvenile delinquents in correctional institutions. Probation as a judicial process and parole as an executive function are examined, and community-based correctional programs and the use of pardon are studied. Prerequisite: None.	
CJC-107 Police Liability	(3-0-3)
Theoretical and practical liability problems facing criminal justice practitioners and administrators. Emphasis centering on deadly force, excessive force, and nonlethal weapons. General policy and procedure development to include certification, training and restrictive use of special police equipment. Pursuit liability and off-duty problems will be included in discussion. Prerequisite: None.	
CJC-110 Introduction to Juvenile Justice	(5-0-5)
A general survey of juvenile behavior considers individual and social problems; theories of delinquency causation, and methods of prevention and correction. The course presents a general overview of the Juvenile Court and the system of juvenile justice. Prerequisite: None.	
CJC-111 Defense Tactics	(1-2-2)
This course presents the police role in physical arrests as a defensive role. The philosophy behind a defensive role will be discussed. Proper attitude, physical conditioning, and self-discipline will be emphasized. The student will be given instruction and practical application in arrest techniques, searches, control holds, baton techniques, and handcuffing. Prerequisite: None.	
CJC-115 Criminal Law I	(3-0-3)
A course designed to present the concepts of criminal law and to provide a legal groundwork for those who seek to enter the criminal justice field. Prerequisite: None.	
CJC-116 Criminal Justice Internship	(0-10-1)
Internships are designed to demonstrate the competency of the student through extension of the learning initiated in previous Criminal Justice courses. Prerequisite: Permission of the department chairperson.	
CJC-117 Criminal Justice Internship	(0-10-1)
A continuation of CJC 117. Prerequisite: CJC 117.	
CJC-118 Criminal Justice Internship	(0-10-1)
A continuation of CJC 117. Prerequisite: CJC 117.	
CJC-119 Criminal Justice Internship	(0-10-1)
A continuation of CJC 118. Prerequisite: CJC 118.	
CJC-120 Criminal Justice Internship	(0-10-1)
A continuation of CJC 119. Prerequisite: CJC 119.	
CJC-121 Criminal Justice Internship	(0-10-1)
A continuation of CJC 120. Prerequisite: CJC 120.	
CJC-125 Judicial Process	(4-0-4)
This course provides the student with a review of court systems, procedures from incident to final disposition, principles of constitutional, federal, state, and civil laws as they apply to and affect law enforcement. Prerequisite: CJC 101.	

CJC-200 Crime Prevention (3-0-3)

This course is designed to make the student aware of the many opportunities for law-breaking open to the potential criminal. Various types of preventive securities such as locks, lighting, alarms, neighborhood watch programs, public presentations on crime prevention to interested groups by the students, etc., will be studied. Prerequisite: None.

CJC-201 Motor Vehicle Law (3-0-3)

A study of the traffic enforcement codes with primary emphasis placed on North Carolina Law as it relates to motor vehicles. Prerequisite: None.

CJC-202 Traffic Planning and Management (3-2-4)

This study covers the topic of traffic management and enforcement giving an overview of problems as they exist today. Attention is given to legislation, organization of the traffic unit, responsibilities to the traffic function of the various units within the law enforcement agency, enforcement tactics, evaluation of the traffic program effectiveness, and allocation of personnel and materials. Accident investigation is stressed. Prerequisite: None.

CJC-205 Criminal Evidence (4-0-4)

The kinds of legal evidence and the rules governing the admissibility of evidence in court are explored in this course. Rules of evidence that apply in civil, criminal, and federal courts are discussed. Topics include: the hearsay rule, dying declarations, privileged communications, and the concepts of relevancy, competency and materiality. Prerequisite: CJC 101.

CJC-206 Community Relations (3-0-3)

This course provides the student with an understanding of community structure as they relate to minority groups, peer groups, socioeconomic groups, leader groups, and group relations. Emphasis is on the organization and function of these groups as they relate to the profession of criminal justice-protective service. Prerequisite: CJC 101.

CJC-210 Criminal Investigation I (4-0-4)

This course introduces the student to fundamentals of investigation, crime scene search, recording, collection and preservation of evidence. Sources of information, interview and interrogation, case preparation, and court presentation will be discussed. Prerequisite: Permission of Department Chairperson.

CJC-211 Introduction to Criminalistics (4-2-5)

A general survey of criminal investigation includes the methods and techniques used in modern scientific investigation of crime, with emphasis on the practical use of these modern methods by the student. Laboratory techniques will be demonstrated and the student will use the scientific laboratory equipment. Prerequisite: CJC 210.

CJC-212 Narcotics, Drugs, and Human Behavior (3-2-4)

This course familiarizes the student with North Carolina drug laws and introduces the identification and classification of dangerous drugs. Emphasis is on the various effects that the different drugs have on the human body and in the temperament of individuals. Prerequisite: Permission of Department Chairperson.

CJC-213 Criminal Investigation II (4-0-4)

This is a continuation of CJC 109 with emphasis on specific offenses such as homicide, burglary, robbery, larceny, narcotics, arson, and sex. Prerequisite: CJC 210.

CJC-216 Criminal Law II (3-0-3)

A continuation of CJC 105 with emphasis on North Carolina Law. The course deals with the concept of criminal responsibility and competency; the law of arrest, and search and seizure; rights of arrested persons; and the laws governing wiretapping and electronic surveillance. The case book approach is used, with leading cases assigned as outside reading and for class discussion. Prerequisite: CJC 115.

CJC-217 Patrol Procedures**(3-0-3)**

This course includes methods of personnel distribution and assignment, operation of vehicles on patrol, answering calls of various types. It provides the opportunity to develop perception and observation concerning persons, places, and things. Safe driving techniques and uses of equipment are presented. Prerequisite: Permission of Department Chairperson.

CJC-220 Police Organization, Administration and Supervision**(5-0-5)**

Principles of organization and administration, personnel management and supervision, training, communication, records, property maintenance, and miscellaneous services are introduced. Prerequisite: None.

CJC-250-251-252 Topics in Criminal Justice—Law Enforcement

These courses provide credit for approved special education of college level beyond minimum standards (basic) training and outside the regular curriculum. The courses may be used only as electives with variable credit from one to a maximum of one-half the elective hours required. All credit awarded by this method must be documented by the department chairperson and processed as proficiency credit.

CSP-100 Food Preparation I**(3-6-5)**

To instruct the student in the basic principles of fine cuisine as it is practiced in the finest hotels and restaurants in the country, with emphasis on sanitation, maintenance, layout, duties of the various stations in the kitchen, vegetable preparation, operation and safety hazards of the various pieces of equipment in the kitchen. Basic oriental cuisine will be emphasized to demonstrate the importance of “mise en place.”

CSP-101 Food Preparation I**(3-0-9-6)**

This course orients the student in the various opportunities in the food service industry as well as the classical stations of the “back of the house.” The safety, care and use of the tools of the kitchen will be stressed. Basic sanitation and personal hygiene will be taught. Precosting and stewarding will also be stressed. Lectures and demonstrations will be followed by a practical lab. With emphasis on eye appeal and variety, the student will prepare and compose fresh, frozen, and canned vegetable plates, along with appropriate garnishes to demonstrate the merchandizing of these plates. Students will be given an opportunity, on a rotating basis, to work as a “commis” in a live production class in six cafeteria-style services. Prerequisite: None.

CSP-102 Food Preparation II**(3-6-5)**

This course offers training in the art of making basic stocks and soups as practiced in the better hotels and restaurants today. The preparation of salads, simple and composed, sandwich preparations, hot and cold appetizers will also be taught. Breakfast preparation will be included. The commis will be involved in six live (a la carte) productions. Prerequisite: CSP 101, CSP 107.

CSP-103 Food Preparation II**(3-0-12-7)**

The student will learn the principles of egg cookery including breakfast preparation. The student will prepare a variety of hot and cold hors d'oeuvres such as Quiche Lorraine, Coquille St. Jacques, Shrimp Remoulade, and Antipasto. The principles and techniques of innovative salad preparation and presentation will be covered. Ingredients, dressings, structure, assembly and garnish will be emphasized. The student will be given the opportunity to develop skill in the prep of simple consommés as well as a variety of cream soups, chowders, bisques and national/regional soups. Thickening agents will be evaluated for the thickening power, holding properties, ease of handling, appearance and taste. Lectures and demonstrations will be followed by a lab. The commis will be involved in six live (a la carte) productions. Prerequisites: CSP 101 and CSP 107.

CSP-104 Food Preparation III**(3-9-6)**

This course will train the student to prepare fish, meats and poultry dishes with their respective sauce. Fine cuisine is detailed with quantity food preparation and production stressed. Prerequisite: CSP 103.

CSP-106 Food Preparation III**(3-0-12-7)**

Emphasis is on the preparation of entrees and their sauces. Exotic and delectable table d'hote menus will be prepared and combined with the main course. Portion Control will be stressed. Beef, veal, lamb and pork in their primal cut form will be used on occasion to demonstrate meat cutting methods. Preparation of seafood with compound butters and sauces will be included. A variety of poultry dishes will be presented. The selection and use of stocks and bases will be discussed. Production class will feature six international buffets. Prerequisite: CSP 103.

CSP-107 Food Service Equipment Orientation**(1-2-0-2)**

This course is to familiarize the student in the operation and safe handling of every major piece of mechanical equipment in the kitchen of the college lab. He will be given the opportunity to learn the inner workings of each piece of kitchen equipment, breaking it down for cleaning and subsequent restructure into its functional entity once again. Functions, uses, operating techniques and safety devices of each piece of equipment will be stressed. Prerequisite: None.

CSP-108 Menu Planning**(1-2-0-2)**

In this course the student will be involved in writing, planning, and merchandising different types of menus. The influence of location, plant, equipment, employees, and customers will be discussed. Techniques used to identify and understand the customer's needs will be stressed. The essential human food requirements will also be discussed and implemented in the menu.

CSP-109 International Cuisine**(2-2-0-3)**

Essentially a research course that will attempt to discover, isolate and trace to their sources the factors which distinctly identify and label the cuisines, culinary practices and techniques of specific countries and certain general geographical areas of the world.

This course will include but not be limited to investigation into and discussions of the history, geography, philosophy, arts, and social structure of the cultures in question, to determine their effect upon gastronomic habits. The course will also look into the origins of famous preparation such as Chicken Marengo, Crepes Suzette, Ceasar Salad, Peche Melba, et al.

Only through investigations such as these can the student develop the background, knowledge, and sensitivity so vital to the creative role of the chef.

CSP-110 Supervised Work Experience*(2-0-40-6)**

This course is planned to give the student an opportunity to work in the industry and gain practical experience. Prerequisite: Successful completion of major courses through 3rd quarter or departmental approval.

CSP-114 Gardemanger**(2-0-3-3)**

This course is to develop the skills and to teach the students the art of gardemanger, the preparation of cold foods. Presentation of piece monte such as chaud froid, grosse piece, and bread weaving will be included. Demonstration will be given for ice carving, pastillage, marzipan, and tallow sculpture. Prerequisite: First year curriculum.

CSP-201 Food Preparation IV**(3-0-12-7)**

The ultimate in advanced culinary preparations is taught. New skills, methods, and preparations will be emphasized. In conjunction with the classical lab, the students will learn, develop and apply an appreciation of table service and techniques. A complete table d'hote menu will be prepared. In the production class, the student will assume the role of chef de partie, sous chef or chef of the day, with the responsibility of planning, precosting and producing a cafeteria-type service. Supervising a station and or the entire kitchen will be emphasized to expand the participant's knowledge of both team work and supervision. Prerequisites: First year curriculum and CSP 110.

CSP-203 Dining Room**(1-2-0-2)**

This course focuses on various forms of dining room service. American, French, Russian and buffet service techniques and procedures will be applied. Practical skill is developed through actual table service in the “Tar Heel Room” of the College. The student will be given an opportunity to perform, on a rotating basis, the role of maitre d’hotel, waiter/waitress. This program will also cover, when applicable, gueridon service. French menu terminology, dining equipment utilization and merchandizing of the dining room will be stressed. Prerequisite: First year curriculum.

CSP-207 Food Preparation VI**(3-0-12-7)**

The student is afforded an opportunity to broaden knowledge and gain practical experience in the preparation of representative foods of different countries. The menus will offer a wide variety of international dishes. Included will be cuisines of Scandinavia, Italy, the Orient and Germany. Buffet planning and layout will also be taught. Emphasis will be on development of personal and professional competence. Prerequisite: CSP 210.

CSP-208 Convenience Foods**(1-2-0-2)**

This course is designed to show the students the potentials of convenience foods and how to use them. Programming convenience foods into the menu will be discussed. Comparisons will be made to test the feasibility and quality of convenience food products. The student will use established procedures to design and layout a “Convenience” kitchen using ¼” scale drawing. Prerequisite: First year curriculum.

CSP-210 Food Preparation V**(3-0-12-7)**

This course will pull together the student’s knowledge and resources in menu planning, forecasting, purchasing, and preparing an a la carte and/or table d’hote menu. This application will be demonstrated in the form of a live production class in the main dining room of the college. The menus will be made up of hors d’oeuvres, soups, entrees, and desserts. Heavy emphasis will be placed in the mise en place of these preparations.

CSP-214 Wine Appreciation**(1-2-0-2)**

This course is designed to have the students practice advanced food preparation on the gueridon in conjunction with the service of wine. Geography, history, classification, and vintages of the wines will be taught and discussed. Tasting and selecting the appropriate wine for the gueridon preparation will be emphasized. Prerequisite: First year curriculum.

DEN-1103 Dental Materials I**(2-2-0-3)**

A study of physical and chemical properties and origin of dental materials, including the manufacturing process of specific materials. Laboratory exercises are designed to develop skills in manipulation and in understanding the application of the materials to dental procedures. Emphasis is on gypsum products, impression materials, polymers and waxes. Prerequisite: None.

DEN-1104 Oral Anatomy and Histology**(2-2-3-3)**

The study of embryology, histology, anatomy, physiology, morphology of the human dentition and its supporting structure and environment. Laboratory sessions are structured to facilitate the learning of form, function, and identification of oral structures with special emphasis on the identification of the primary and permanent dentition. Prerequisite: None.

DEN-1105 Dental Science**(3-2-0-4)**

A study of the basic principles of general and oral pathology and the prescription and administration of drugs commonly used in dentistry. Prerequisite: DEN 1104.

DEN 1106 Head and Neck Anatomy**(2-0-0-2)**

The study of the bones, muscles, blood, lymph and nerve supplies of the head and neck region. Landmarks of the skull are identified and the relationship of head and neck anatomy to dental assisting is emphasized. Prerequisite: DEN 1104.

DEN-1120 Clinical Science I (3-4-0-5)

A study of clinical procedures and treatment; the recognition, care, and use of basic dental instruments and equipment, and the manipulation of materials associated with operative dentistry. Emphasis is on developing skill competencies, in anticipating the needs and assisting the dentist in four-hand dental procedures. Prerequisite: None.

DEN-1121 Dental Radiology (2-2-3-4)

The principles and techniques of exposing, processing, mounting, filing and storing intraoral and extraoral radiographic film. Characteristics of film, film selection for various techniques and care of equipment and facilities are included. Radiation physics, biological hazards and protection of patient, operator and others are emphasized. Laboratory and clinical practices are designed according to current legal requirements. Prerequisite: None.

DEN-1122 Dental Materials II (2-2-0-3)

A continuation of Dental Materials I, with emphasis on mastery of the manipulation of various materials, e.g. cavity varnishes and liners, dental cements, amalgam alloys, dressings, and cast gold alloys. Prerequisite: DEN 1103.

DEN-1123 Oral Health Education (2-0-3-3)

A study of the etiology prevention and control of dental caries and periodontal disease with emphasis on the dental assistant's role in oral health education. Audiovisual materials, phase microscope, caries susceptibility tests and plaque scoring indices are included in the interpretation of dental health information. Communication skills, nutritional counseling, oral physiotherapy and fluorides are emphasized through clinical experiences in patient education. Prerequisite: DEN 1104, DEN 1120.

DEN-1125 Dental Affiliation I (1-0-12-5)

A clinical practice learning experience for competency development in performing dental assisting duties in dental offices and clinics. Clinical practice, primarily in general dentistry, will include chairside assisting techniques, and clinical support procedures. Prerequisite: All first and second quarter courses.

DEN-1130 Clinical Science II (3-3-3-5)

A clinical science course to increase skill competency levels in operative dentistry. Major emphasis is given to principles and procedures of the dental specialties, including endodontics, periodontics, orthodontics, prosthodontics, pedodontics, oral surgery, and public health dentistry. Prerequisite: DEN 1120.

DEN-1131 Dental Office Management (3-2-0-4)

Principles and procedures related to dental office management. Fundamentals of accounting and financial management are applied to dental office procedures. Opportunity for competency development in preparing, processing, maintaining and storing records; communications; scheduling appointments; inventory control and patient management. Prerequisite: None.

DEN-1133 Dental Office Emergencies (2-2-0-3)

The study of the more common dental/medical emergency situations which may occur in the dental office. Attention will be directed toward the recognition and initial treatment of these emergencies via the use of the knowledge of the vital signs, and the implementation of the emergency kit, oxygen and/or cardiopulmonary resuscitation. Prerequisite: DEN 1104, DEN 1120, DEN 1130.

DEN-1135 Dental Affiliation II (1-0-18-7)

A clinical practice learning experience to increase dental assisting skills to job-entry level competency. Clinical assignments in various dental specialty practices, as well as general dentistry practices, will provide opportunities for advanced skill development in chairside assisting techniques, clinical support and business office procedures. Prerequisite: All first, second, third quarter courses.

DEN-1141 Professional Development (3-0-0-3)

Designed to prepare the student for employment as a dental assistant. Ethical, legal and personal responsibilities; testing and certification requirements; career opportunities; resumes and interviewing techniques. Prerequisite: All first, second, third quarter courses.

DFT-101 Drafting (2-4-4)

Introduction to field of drafting, lettering; use of instruments; geometric constructions; orthographic projection theory, sketching, reading, and instrument drawing; basic pictorial drawings; introduction to dimensions and notes; and reproduction process. Prerequisite: None.

DFT-102 Drafting (2-4-4)

Auxiliary views, sections and conventions; dimensioning and shop notes for detail drawings; introduction of working drawings; screw threads, fasteners, keys, and springs; and simple assembly drawings. Prerequisite: DFT 101.

***DFT-103 Drafting (2-4-4)**

The study of precision dimensioning; preparation of set of working drawings; assembly drawings, detail drawings, and part lists; surface quality (finish), and weldments and symbols. Prerequisite: DFT 102.

DFT-104 Civil Drafting (2-4-4)

Plats as required by law drawn in pencil and ink. Highway construction layouts and profiles, steel and wood structural drawings, topographical mapping and symbols. Prerequisite: DFT 101.

DFT-106 Technical Graphics (2-4-4)

A basic course with an introduction to industrial drafting standards and practices. Special emphasis on representation and analysis of experimental data incorporating various graphical devices. Topics include use of drafting instruments and equipment; freehand lettering; multiview drawing; rectilinear, semi-log, and full-log graphing for display and analysis; polar and trilinear graphs; flow and pictorial diagrams. Prerequisite: None.

DFT-109 Electronic Drafting (2-4-4)

A basic course with an introduction to industrial drafting standards and practices with applications to the electronics industry. Preliminary topics include use of drafting instruments and equipment; freehand lettering; multiview drawings. Special emphasis is placed on remaining topics including electrical and electronic symbols; block diagrams, schematic diagrams and wiring diagrams. Prerequisite: None.

DFT-201 Design Drafting I (2-6-4)

Structural steel layout and detailing; application of structural shapes; fluid distribution; selection of pipe, tubing and fittings, single line piping diagrams and two line piping drawings; electronic and electrical symbols; and single line, schematic, and wiring diagrams. Emphasis will be placed on use of catalog and manuals related to the above areas of study. Inking technique and use of special drafting media will be applied where appropriate. Prerequisite: DFT 103.

DFT-204 Descriptive Geometry (2-6-4)

Points, edges, lines, planes, curved lines, curved surfaces, irregular surfaces, intersections, developments, auxiliary projections, revolutions, vectors, and practical design applications. Prerequisite: DFT 102.

***DFT-205 Design Drafting II (2-6-4)**

Charts and graphs, plats as required by law; topographical mapping and symbols; and design layouts and working drawings of gears, gear train drives, belt and pulley drives, and chain and sprocket drives. Prerequisite: DFT 103.

***DFT-206 Design Drafting III (2-6-4)**

Assignment of mechanical design projects requiring use of research; application of basic engineering principles; calculations; and use of various manuals, catalogs, and periodicals. Preliminary design sketches, layout drawings, detail drawings, subassembly drawings, assembly drawings, specifications, patent drawings and simplified drawing practices will be required. Prerequisites: DFT 205 and DFT 211.

***DFT-211 Mechanisms and Kinematics Design (2-6-4)**

Introduction and definitions of kinematic terms; vectors; motion concepts; kinematic drawing; kinematic displacement, centros, velocities and accelerations of mechanisms; motion curves; displacement diagrams and cam layout; and practical problems, gear trains, cams, belts and pulleys, and chains and sprockets. Prerequisites: DFT 204, DFT 205, and PHY 102.

***DFT-212 Jig and Fixture Design (2-6-4)**

Emphasis is placed on tool planning, design and drafting; commercial standards, principles and practices; selection of materials and standard parts; use of catalogs and manuals; and cost estimates. Projects are assigned requiring the design of jigs, fixtures, and gauges. Prerequisite: DFT 205.

DFT-242 Architectural Drafting (2-6-4)

Emphasis is placed on the development of a set of working drawings for a residence utilizing Federal, State and Local codes and construction techniques relative to local area. Study will include plot plan, floor plan, elevations, basement-foundation plan, wall sections, details, electrical plan, plumbing, specifications, and bill of material. Prerequisite: DFT 103.

DFT-1126 Pattern Development and Layout (0-3-0-1)

A study of methods used in layout of sheet steel. Special emphasis is placed on developing pipe and angle layouts by the use of patterns and templates. Prerequisite: BPR 1104.

DFT-1127 Construction Trades Drafting I (2-2-0-3)

Use of instruments; lettering; planning and preliminary sketches, dimensioning practice; and use of symbols and conventions will be utilized in the development of working drawings for a residence. Emphasis will be on preparation of floor plan and typical wall section. Prerequisite: BPR 1109.

DFT-1128 Construction Drafting II (2-2-0-3)

A continuation of DFT 1127 with emphasis placed on development of foundation plan, exterior elevations, sections and details found in set of working drawings for a residence. Prerequisite: DFT 1127.

DFT-1207 General Machine Drafting (2-4-0-4)

Use of instruments; lettering, orthographic drawing, sections and primary auxiliary views; dimensioning; displacement, timing and motion diagrams; and cam layout. Prerequisite: BPR 1106.

***DFT-1209 Tool Design and Planning (2-4-0-4)**

This course will enable the student to plan the process of production and isolate the areas that must be tooled for production. Cost of tools, jig and fixtures, and gaging will be considered. Students will review available items from vendors and utilize standard bushing charts and other references. Typical tool design procedures will be employed and prints must reflect standard procedures. Prerequisite: DFT 1207.

DHY-103 Dental Radiology I (3-2-0-4)

A study of the scientific principles of radiology, including the biological effects of radiation and radiation safety. The student will be introduced to the exposing and processing of dental radiographs. Prerequisite: None. Corequisite: DHY 104.

DHY-104 Dental and Oral Anatomy (3-4-0-5)

A study of the teeth, their environment and supporting structures; the structures of the head and neck regions and their functions. Laboratory experiences include identification of natural teeth and utilization of models and skulls. Prerequisite: None.

DHY-105 Dental Radiology II (1-3-0-2)

This course will prepare the student for the clinical practice of dental radiology. Prerequisite: DHY 103.

DHY-106 Oral Embryology and Histology (3-0-0-3)

A study of the oral histological development of the face and oral cavity, structures and functions of primary tissues, and the development of teeth and supportive tissues. Prerequisites: BIO 101 and DHY 104.

DHY-110 Pre-Clinical Dental Hygiene I (2-6-0-5)

A study of principles and techniques for preoperative procedures and clinical dental hygiene procedures as well as development of a professional vocabulary. Initial development of a career philosophy and personal values for clinical dental hygiene practice is encouraged. Prerequisite: None.

DHY-111 Pre-Clinical Dental Hygiene II (3-6-0-6)

Theories and techniques for prevention of dental disease, including etiology, detection, removal and prevention of dental deposits are studied and practice. Patient assessment, education and evaluation emphasize the concept of total patient care in dental hygiene practice. Prerequisite: DHY 110, DHY 104.

DHY-114 General and Oral Pathology I (2-0-0-2)

The introduction of general and oral pathology, and the nature of disease with emphasis on therapy of diseased conditions the dental hygienist may encounter in practice. Prerequisite: BIO 102, DHY 106.

DHY-115 General and Oral Pathology II (2-0-0-2)

A continuation of DHY 114. Prerequisite: DHY 114.

DHY-116 Dental Hygiene Seminar I (3-2-0-4)

A continuation of DHY 111 designed to prepare the student for clinical experience through the application of theory and skills. Dental office emergencies, first aid, and CPR are included. Prerequisite: DHY 111.

DHY-117 Dental Hygiene Clinic I (0-0-9-3)

The student provides direct patient care services for patients from the community in the dental hygiene clinic at a beginning level. Prerequisite: DHY 111.

DHY-118 Dental Hygiene Seminar II (2-2-0-3)

In this course the student will be introduced to the remaining psychomotor skills necessary to perform total patient care including management of the special patient. Externships provide the student with enrichment experiences off campus. Prerequisites: DHY 116 and DHY 117.

DHY-119 Dental Hygiene Clinic II (0-0-9-3)

The student demonstrates increased levels of competency in the performance of traditional and supportive tasks in the dental hygiene clinic with patients from the community. Prerequisites: DHY 116 and DHY 117.

DHY-203 Community Dental Health I (3-2-0-4)

A study of the principles and methods used in assessing, planning, implementing, and evaluating a dental health program. Prerequisite: SOC 201.

DHY-205 Periodontology (3-0-0-3)

A study of the biological and clinical factors as they relate to periodontal disease. Prerequisite: DHY 106.

DHY-206 Dental Materials (3-4-0-5)

A study of the source and physical properties of materials used in dentistry. Manipulation of various materials is practiced with emphasis on the role of the hygienist when delivering direct patient care. Prerequisite: None.

DHY-216 Dental Hygiene Seminar III (3-3-0-4)

A study of nutrition as it relates to the dental patient emphasizing the role of the dental hygienist concerning diet analysis, nutrition and foods contributing to dental health. Externships provide the student with enrichment experiences off campus. Prerequisite: NUT 202, DHY 118, DHY 119.

DHY-217 Dental Hygiene Clinic III (0-0-12-4)

This course focuses on increased levels of competency for performance of all required clinical skills. Emphasis is given to care of patients with periodontal disease. Prerequisite: DHY 118, DHY 119.

DHY-218 Dental Hygiene Seminar IV (3-3-0-4)

This course encourages the student to develop personal traits and skills which enhance their employability as a provider of oral care. Externships provide the student with enrichment experiences off campus. Prerequisite: DHY 216, DHY 217.

DHY-219 Dental Hygiene Clinic IV (0-0-12-4)

A continuation of DHY 217 with demonstration of increased levels of competency expected. Prerequisite: DHY 216, DHY 217.

DHY-221 Pharmacology (3-0-0-3)

A basic study of physical and chemical properties, dosages and therapeutic effects of drugs used in dentistry, and drugs which have clinical significance in management of routine and emergency dental patients. Prerequisites: BIO 102, DHY 115.

DHY-222 Community Dental Health II (1-4-0-3)

A continuation in the study of dental public health with emphasis on assessing, planning, implementing, and evaluating a dental health program. Prerequisite: DHY 203.

DHY-223 Dental Hygiene Seminar V (3-3-0-4)

A study of the codes of ethics and laws which govern the practice of dentistry and dental hygiene and their application to continual professional development. Externships provide the student with enrichment experiences off campus. Prerequisite: DHY 218, DHY 219.

DHY-224 Dental Hygiene Clinic V (0-0-12-4)

The treatment of an increased number of patients during each clinic session without sacrificing quality of care is emphasized. The student is expected to demonstrate exit level competencies for performance of all clinical dental hygiene practice tasks. Prerequisite: DHY 218, DHY 219.

ECO-102 Economics I (3-0-3)

The fundamental principles of economics including the institutions and practices by which people gain a livelihood. Included is a study of the laws of supply and demand and the principles bearing upon production, exchange, distribution, and consumption both in relation to the individual enterprise and to society at large. Prerequisite: None.

ECO-104 Economics II (3-0-3)

Greater depth in principles of economics including a penetration into the composition and pricing of national output, distribution of income, international trade and finance, and current economic problems. Prerequisite: ECO 102.

ECO-105 Introduction to Economics (5-0-5)

The fundamental principles of economics including the institution and practices by which people gain a livelihood. Included is a study of the laws of supply and demand and the principles bearing upon production, exchange, distribution, consumption, composition and pricing of national output, distribution of income, international trade and finance, and current economic problems. Prerequisite: None.

ECO-107 Consumer Economics (3-0-3)

Designed to help the student use his resources of time, energy, and money to get the most out of life. It gives the student an opportunity to build useful skills in buying, managing his finances, increasing his resources, and to understand better the economy in which he lives. Prerequisite: None.

ECO-108 Consumer Economics (5-0-5)

An in-depth study of consumer economics integrating the basics of consumer economics with the functional application of economic principles. Prerequisite: None.

ECO-1107 Consumer Economics (3-0-0-3)

The goal of this course is to meet the consumer needs of Vocational Education students by preparing them, according to their abilities and interests, to manage limited resources under changing economic conditions. Budgeting and the use of credit constitute major areas of concern. Prerequisite: None.

EDP-104 Introduction to Business Data Processing (2-2-3)

Fundamental concepts and operational principles of business data processing systems, along with an introduction to computer programming, are presented. The emphasis is on concepts and terminology used in business type applications. Prerequisite: None.

EDP-105 Introduction to Scientific Data Processing (2-2-3)

This course is designed to meet the basic data processing needs for students within the Division of Engineering Technology. The emphasis is on data representation, numbering systems, and solving scientific and engineering type problems in either Fortran or Basic. Prerequisite: None.

EDP-107 Third Generation Operating Systems (3-2-4)

This course introduces operating system and multi-programming concepts, Memory configuration, modes of representing data, addressing of basic instruction formats on IBM S/360-370 and the Univac 90/30B are included. Prerequisite: EDP 104.

EDP-108 Business Programming (ASSEMBLER) (4-0-4)

The Assembler Language programming course includes details for writing programs to function under the Disk Operating System (DOS) of the IBM System/360-370 and the OS/3 of the Univac 90/30B. Specific information pertaining to the OS/3 is presented. Corequisite: EDP 107.

EDP-109 Systems and Procedures (ASSEMBLER) (1-3-2)

Programming projects are assigned to students to be written and run on the Univac 90/30B in Assembler Language. The projects include typical procedures and applications found in business and industry. Prerequisite: EDP 108.

EDP-118 Data Base Management Concepts (3-2-4)

This course introduces data base concepts and compares this type of file organization with the more conventional types. The students will develop a data base using one of the up-to-date base systems. Prerequisite: EDP 109. Corequisite: EDP 215.

EDP-160 EDP Operations (2-3-3)

This course will provide a production environment for the study of computer operations. The student will receive practical experience in the utilization of utilities, JCL, spooling, cataloging, interactive processing, and related techniques. Corequisite: EDP 104, EDP 172.

EDP-164 Introduction to Programming (2-2-3)

The student will study general principles of computer processing and develop an elementary working knowledge of the BASIC computer programming language. Prerequisite: None.

EDP-171 Principles of Keyboarding (2-3-3)

The student receives introductory skill development in keying data using an electronic keyboard. Emphasis is placed on developing accuracy and productivity in data preparation. Prerequisite: SSC 103.

EDP-172 Data Entry: Concepts and Applications (2-3-3)

This course provides exposure to data entry activities for electronic key devices. Students utilize the "touch system" to complete a wide variety of commercially oriented data entry jobs. Prerequisite: EDP 171.

EDP-173 Cooperative Experience (0-20-2)

In order to receive credit for EDP 173, the student must secure and successfully complete 220 hours of actual employment in a job approved by the department co-op instructor. This experience should allow the student to relate more meaningfully to the world of work and to a specific place in the world of work. Prerequisite: successful completion of all prior course work.

EDP-174 Seminar on Cooperative Education (2-0-2)

During the seminar sessions, the working student will discuss the problems encountered in the position and the means to overcome these problems.

EDP-175 Production Data Entry (1-4-3)

A continuation of EDP 172. The student data entry operator will also function as a student manager responsible for supervising data entry projects. In an effort to familiarize the learner with various data entry systems and keying devices, the student will observe for one week a local data processing operation and will prepare a written report for class presentation. Prerequisite: EDP 172.

EDP-200 Introduction to Microcomputers (2-3-3)

This course is designed to introduce students to selected hardware and software concepts and applications of microcomputers. In developing skill and knowledge of the various processing features of microcomputer systems, practical applications such as programming and word processing are emphasized. The study includes systems configuration, hardware, and design topics. Prerequisite: None.

EDP-205 Scientific Programming (FORTRAN IV) (2-2-3)

Formula Translation (FORTRAN IV) programming stresses the components of the language including fundamental concepts, subscripted variables, subprograms, logical operations, character manipulation, advanced format, and input-output features for disk and tape. Prerequisite: EDP 107. Corequisite: MAT 214.

EDP-208 Commercial BASIC (2-2-3)

The purpose of this course is to provide a survey of BASIC, emphasizing commercial applications. Areas of study will include BASIC syntax and logic, program design, print formatting, file maintenance, screen maintenance, user functions, system calls, chains and swaps, comparative BASICs, and BASIC systems. Prerequisite: None.

EDP-215 Business Programming (COBOL) (4-0-4)

The Common Business Oriented Language (COBOL) is presented in detail. A variety of business and commercial applications are programmed and tested. Prerequisite: EDP 107, BUS 121.

EDP-216 Systems and Procedures (COBOL) (1-3-2)

This course covers studies of typical COBOL systems and procedures now being used in commercial and industrial computer installations. The student studies the organization of data for computer application. Major applications are followed with projects performed by the student. Corequisite: EDP 215.

EDP-217 Business Programming (Advanced COBOL) (4-0-4)

This course is an extension of basic COBOL. It allows time needed for understanding and writing more sophisticated programs under OS/3. Corequisite: EDP 216.

EDP-218 Business Programming (RPG II) (4-0-4)

Report Program Generator (RPG II) coding includes preparation of spacing chart, file description, file extension, input, calculation, and out-put specifications. Business application programs are written. Prerequisite: EDP 107, BUS 121.

EDP-219 System and Procedures (RPG 11) (1-3-2)

This course gives the student additional explanation on systems and procedures as they relate to the Report Program Generator coding system. Corequisite: EDP 218.

EDP-220 Systems Analysis and Design (2-3-3)

In addition to learning theoretical concepts, students study an existing data processing system and make recommendations for improvement, or design a new system. The work is in the nature of a programmer-analyst. The task involves the flow of work from its point of origin to completion by the computer program including all forms design, full documentation, and report. Prerequisite: None.

***EDP-221 Advanced Projects (COBOL) (1-3-2)**

This course is designed to provide the student with experience in applying COBOL programming techniques to advanced problem solving. Students will utilize skills and techniques required in previous data processing courses to implement an integrated COBOL application. Prerequisite: EDP 220. Corequisite: EDP 217.

EGR-100 Introduction to Engineering Technology (1-2-2)

The broad scope of engineering technology is covered with later emphasis on specific fields. Differences between engineering and engineering technology, continuing education opportunities, employment outlook, duties of technicians on the job, and supporting functions of the college including financial aid and counseling are covered. Guest lecturers include former graduates and industry representatives. Films, field trips and engineering technology lab activities allow supplemental exposure.

Students will prepare a paper on a particular engineering technology topic to be approved by instructor. Prerequisite: None.

ELC-201 Electrical Machinery (3-0-3)

A course in basic understanding and application of electricity to modern industrial machinery. Included is a study of D.C. and A.C. motors, motor controls and protecting devices, transformers, and their industrial applications. Prerequisite: PHY 103.

ELC-1117 Basic Electricity (3-2-0-4)

A study of the electrical structure of matter and electron theory, the relationship between voltage, current, and resistance in series, parallel, and series-parallel circuits. An analysis of direct current circuits by Ohm's Law and Kirchoff's Law. A study of the sources of direct current voltage potentials. Fundamental concepts of alternating current flow, reactance, impedance, phase angle, power, and resonance. Analysis of alternating current circuits.

ELC-1118 Applied Electricity (3-2-0-4)

Provides fundamental concepts in single and polyphase, alternating current circuits, voltages, currents, power measurements, transformers, and motors. Instruction in the use of electrical test instruments in circuit analysis. The basic concepts of AC and DC machines and simple system controls. An introduction to the type of control used in small appliances such as: thermostats, timers, or sequencing switches. Applicable sections of the current National Electrical Code will also be presented. Prerequisite: ELC 1117.

ELC-1119 Electricity for Welders (3-2-0-4)

A study of the relationship between voltage, current, and resistance in series and parallel circuits. Analysis of A.C. and D.C. circuits by Ohms and Watts laws. A study of D.C. current motors and generators. A study of transformers, rheostats and controls, basic study of grounding, bonding and calculation of conductors.

ELC-1201 Electricity—Industrial (2-3-0-3)

A study of the relationship between voltage, current and resistance in series, parallel and combination circuits. Fundamental concepts of alternating current flow; a study of reactance, impedance, phase angle, power and resonance and alternating current circuit analysis.

ELN-101 Fundamentals of D-C (4-4-6)

Principles of direct current electricity including: basic electron physics; electrical units of measure; Ohm's law, series, parallel, and series-parallel resistive networks; Kirchoff's laws; basic measuring instruments; electrostatics; capacitors; R-C time constraints; magnetism; inductance; L-R time constants. Laboratory experiments provide proof of the important concepts developed. Prerequisite: None.

ELN-102 Fundamentals of A-C (4-4-6)

Principles of alternating current electricity including: sine wave analysis, resistive, capacitive, and inductive networks; phasor relations in complex circuits; non-resonant and resonant series and parallel L-C-R circuits; inductive coupling; air and iron core transformer analysis. Important theoretical concepts are substantiated by laboratory experiments. Prerequisite: ELN 101.

ELN-104 Vacuum Tube Network Analysis (4-4-6)

An introductory study of vacuum tubes as an active circuit element with graphical and equivalent circuit analysis. Networks are analyzed with the use of Thevenin Theorem, Norton's Theorem, Kirchoff's Voltage and current laws and the Superposition Theorem. Both device and circuits are studied to develop the skills necessary to analyze circuit performance of complex networks using active devices. Prerequisite: ELN 102.

ELN-106 Introduction to Solid State Devices (4-4-6)

A brief introduction to semiconductor theory, followed by a D-C analysis of the PN junction, semiconductor diodes (conventional and Zener) and bipolar transistors. Graphical analysis is employed for introductory purposes but course emphasis is directed toward circuit solution utilizing hybrid parameters. Transistor biasing is considered in conjunction with device limits and thermal effects. Prerequisite: ELN 104.

ELN-207 Transistor Amplifier Analysis (4-4-6)

Further development of the semiconductor studies of ELN 106. Alternating current circuit concepts are introduced. The transistor is studied as an amplifier in the common emitter, common collector and common base configurations. The push-pull amplifier is introduced. Field effect transistors are included as a separate study. Prerequisite: ELN 106.

ELN-209 Circuit Analysis (4-4-6)

A study of special purpose amplifiers and related components. Cascade amplifiers are studied from their non-ideal aspects. Operational amplifiers are studied as analog devices capable of performing mathematical operations. Input and output level and impedance matching of amplifiers are considered as well as additional related topics such as differential amplifiers and a further study of oscillators. Prerequisite: ELN 207.

ELN-211 Logic Circuits (4-4-6)

An introduction to solid state logic circuits. Topics of study are—OR gates, AND gates, inverters, inhibit operations. EXCLUSIVE OR gates, AND gates, NOR gates, binary addition and subtraction with logic circuit elements, registers, encoding, decoding, and finally combining the circuits studied "with an introduction to microprocessors". Prerequisites: ELN 106, MAT 121.

ELN-213 Waveshaping and Pulse Circuits (4-4-6)

A course continuing studies initiated in ELN 211 and introducing additional topics. Logic circuits study is extended to include bistable multi-vibrator, monostable, multivibrator, astable multi-vibrator and Schmitt trigger. Differentiators, integrators, ramp generators and related topics are included as well as additional studies of device limitations as applied to switching circuits. Prerequisite: ELN 209.

ELN-214 Microprocessors (4-4-6)

A study of the computer on a chip. This study includes combinational logic circuits, numbering systems, memory—RAM/ROM, Tri-state control, busing, Peripheral interface adapter. The units are studied from both a hardware and programming technique and are combined into a micro-computer system for analysis. Prerequisite: ELN 211.

ELN-217 Introduction to Special Devices (4-4-6)

A study encompassing semiconductor devices with negative resistance characteristics or other special properties. Devices studied include unijunction transistors, four layer diodes (SCR, SCS, TRIAC, etc.), tunnel diodes. Shockley diodes and others. Prerequisite: ELN 106.

ELN-219 Industrial Instrumentation (4-4-6)

An investigation into sensing devices, information processing and discrimination, recorders, and output devices. These elements are considered in analog and digital applications to industrial control and automation systems. Prerequisites: ELN 209, ELN 211.

ELN-221 Electronic Circuit Design (4-4-6)

A research project for the advanced student to provide a realistic and creative application of his fundamental electronic knowledge to a demonstrable system of his own design. A further objective in cooperation with the English department is to provide further experience in preparing meaningful technical reports. Prerequisite: ELN 209, ELN 211.

EMS-100 Introduction to Emergency Medical Services (2-2-0-3)

An introduction to the pre-hospital care of the critically ill or injured that will prepare students to act as first responders. Students will complete certification requirements for cardiopulmonary resuscitation. Prerequisite: Departmental Approval.

EMS-101 Fundamentals of EMS (4-2-1-5)

This course is designed to introduce the student to the health care system and the function of emergency medical service providers within that system. A team approach is emphasized and the student is oriented to the responsibilities of individual team members. In addition, initial assessment and management of illness and injury will be introduced. Basic skills will be practiced in the laboratory portion of this course. Prerequisite: Departmental Approval.

EMS-102 Emergency Assessment and Intervention (4-0-3-5)

This course emphasizes the fundamental, cognitive, and manipulative skills common to the basic emergency care and assessment of both ill and injured patients. Common equipment found on ambulances and in hospitals is utilized. Theoretical principles underlying the use of equipment, treatment, and evaluation of various emergency problems is emphasized. Prerequisite: EMS 101; Departmental Approval.

EMS-103 Principles of Extrication and Rescue (4-3-0-5)

This course is designed to acquaint the student with techniques of extrication and rescue by presenting a comprehensive approach to the problems of gaining access, disentanglement, packaging and removal of persons entrapped in wrecked vehicles. Skills will also include water rescue, rescue from heights, rescue from depths, and rescue from burning buildings. A wide range of problems which occur during any rescue operation and for which the professional rescuer must be prepared is included. Prerequisite: Departmental Approval.

EMS-104 Injury Management I (4-2-0-5)

This course emphasizes physical assessment of patients with specific medical and trauma related problems. In addition, principles of fluid and electrolyte balance are discussed as they apply to the treatment of shock and other disorders. Prerequisite: EMS 102, BIO 102; Departmental Approval; Current N.C. EMT Certification.

EMS-105 Clinical Seminar and Practicum I (2-0-9-5)

Beginning experience in hospital observation and field experience. Students present case studies from their field or hospital experience for informal discussion by the group. Emphasis is placed on the integration of theoretical knowledge obtained in EMS courses with the realities of practical field oriented patient care. Prerequisite: EMS 102, BIO 102; Departmental Approval; Current N.C. EMT Certification.

EMS-108 Clinical Seminar & Practicum II (2-0-9-5)

Planned learning in hospital and field settings is included. Care of patients with disorders of hydration, volume loss, and metabolism is included. Techniques of drug administration, intervention, and side effects will be stressed. Prerequisite: EMS 104, EMS 105; Corequisite: EMS 110, EMS 201.

EMS-110 Pharmacology for EMS (4-0-0-4)

This course explores the fundamental classification and action of common chemotherapeutic agents. Emphasis is placed on the action and use of compounds most commonly encountered in the treatment of acutely ill patients. Students will also become familiar with commonly used drug measurements and the calculation of dosages. Prerequisite: EMS 104, EMS 105; Corequisite: EMS 202.

**EMS-122 Emergency Vehicle Operation,
Communications and Record Keeping (5-2-0-6)**

The first phase of this course examines the principles and practices governing the safe operation and maintenance of emergency vehicles. Students will practice advanced driving maneuver skills during this phase. The second phase prepares the student to effectively utilize emergency communications equipment. This phase also introduces the student to the need and expanding use of record and data processing in the field of emergency care. Prerequisite: Departmental Approval.

EMS-201 Advanced Line support (4-2-0-5)

In this course, anatomy and physiology of the cardiopulmonary systems are reviewed. Basic electrocardiography and the study of common cardiac arrhythmias are introduced. Coronary artery disease, acute myocardial infarction including early warning signs, electrical arrhythmias, and mechanical complications of heart disease are discussed. The laboratory provides programmed instruction in basic arrhythmia recognition and familiarizes the student with cardiac monitoring techniques and devices. Prerequisite: EMS 104, 105; Corequisites: EMS 108, EMS 110.

EMS-202 Clinical Seminar and Practicum III (2-0-9-5)

Guided learning experience in the care of patients with complex problems is included. Emergency room intensive care unit and field experience provide emphasis on the assessment and treatment of victims with unstable mental and physical problems of a critical nature. Prerequisite: EMS 108, EMS 110, EMS 201; Corequisite: EMS 205.

EMS-203 Emergency Psychiatric Care (3-0-0-3)

This course begins with an overview of the characteristics of various neurotic and psychotic disorders. Emergency intervention in patients who exhibit suicidal, assaultive, destructive, resistant, bizarre, toxic, amnesic, or paranoid behavior is covered. In addition, the student becomes acquainted with the paramedic role during the pre hospital care of psychiatric patients and the legal commitment process for mandatory psychiatric treatment. Prerequisite: PSY 203.

EMS-205 Advanced Life Support II (4-2-0-5)

Review of the advanced care given to patients with injuries and illnesses involving the central nervous system, soft tissues, and the musculo-skeletal system. Medical and environmental injuries and illnesses will be addressed in terms of advance life support & techniques, appropriate drugs and intervention. Prerequisite: EMS 108, EMS 110, EMS 201; Corequisite: EMS 202.

EMS-206 Clinical Seminar and Practicum IV (2-0-9-5)

Experience in the practice of advanced life support skills used is provided. Emphasis is placed on the care of patients with cardiovascular disorders. Experience is also provided in the care of patients during the ante-partal, intra-partal, and post-partal phases of pregnancy. Concurrent with EMS 107—OB, Newborn, and Pediatric Emergencies. Prerequisite: EMS 202, EMS 205; Corequisite: EMS 207.

EMS-207 OB, Newborn, and Pediatric Emergencies (4-0-0-4)

Assessment and decision-making concerning obstetrical and gynecological emergencies are covered in this course. The student is prepared to recognize imminent birth and assist the mother in the delivery process. Recognition of both normal and complicated deliveries is expected. Emergency resuscitation techniques for the newborn, transportation of the high-risk infant, care related to traumatic abortion and to the rape victim are included. Emergency care specific to children concludes the course. Prerequisite: EMS 202, EMS 205; Corequisite: EMS 206.

EMS-211 Clinical Seminar and Practicum V (2-0-9-5)

The course allows the augmentation of all emergency care skills including basic and advanced life support, psychiatric, and maternity care as well as patient handling techniques. Students are expected to function as team members in field experience. Prerequisite: EMS 206.

EMS-213 Industrial Hazards and Disaster (2-2-0-3)

In this course students are exposed to a variety of problems and hazards encountered by North Carolina's industrial workers. Chemical poisons, both airborne and contact, are studied. Industrial trauma is explored in detail. The course concludes with a study of disaster experience. Prerequisite: Departmental Approval.

EMS-215 EMS Personnel Management (4-2-0-5)

This course explores the problems of management in the EMS system. Basic principles of supervision and management organization are presented. The structure and function of municipal governments, EMS grantsmanship, regulatory agencies, systems management, legal and other topics relevant to the EMS manager are discussed. Problems of manpower and training are also included. Prerequisite: PSY 101, Departmental Approval.

EMS-216 Fundamentals of Public Safety (3-2-0-4)

This course introduces the student to the roles of the various public safety personnel. Interaction between EMS and other public safety agencies is stressed. Emphasis is given to the basic practices of fire services personnel. Prerequisite: Departmental Approval.

ENG-090 English as a Second Language (3-0-3)

Spoken and written English skills for the non-native speaker of English. After being tested for his level of English proficiency, the student is given oral drills and written exercises geared to his individual needs. Special attention is devoted to the more difficult linguistic patterns of the English language. Prerequisite: None.

ENG-091 Guided Reading Skills (3-0-3)

This pre-college course is designed to strengthen the student's skills in reading comprehension and vocabulary. Diagnostic testing is given to determine a student's specific weaknesses; then individualized instruction is given, utilizing audio-visual materials whenever appropriate. Reading skills include getting the main idea, drawing conclusions, making inferences, and understanding words in context. Prerequisite: None.

ENG-092 Mechanics of English Grammar (3-0-3)

A pre-college course designed to give the student a thorough knowledge of basic English grammar and usage. Special emphasis is given to sentence structure, parts of speech, and punctuation. The instruction is individualized so that the student can proceed at his own pace and get special help in problem areas. Prerequisite: None.

ENG-096 Study Skills (3-0-3)

This pre-college, individualized course gives practical experience in developing and utilizing study skills, including how to use the dictionary and other reference aids; how to get maximum information from textbooks; how to take lecture notes, and how to effectively memorize material. Guidance is also provided in developing sound study habits. Prerequisite: None.

ENG-100 Reading Comprehension (1-2-2)

A reading program designed to assist students in improving their reading skills. Emphasis is on reading for comprehension, vocabulary improvement, and increasing speed. Prerequisite: None.

ENG-101 Fundamentals of English (3-0-3)

Designed to aid the student in achieving correct and effective self-expression. The emphasis is on improvement of written expression through the use of the functional approach. The course is intended to prepare the student for appropriate written and spoken communication in day-to-day situations in his work and in his social life. Prerequisite: None.

ENG-102 Composition (3-0-3)

Designed to aid the student in further improvement of self-expression in business and technical composition. Emphasis is on the sentence, paragraph, and whole composition. Prerequisite: ENG 101 or ENG 111.

ENG-103 Report Writing (3-0-3)

The fundamentals of English are utilized as a background for the organization and techniques of modern report writing. Exercises in developing typical reports, using writing techniques and graphic devices, are completed by the students. Practical application in the preparation of a full-length report is required of each student. This report is based on material in his chosen curriculum. Prerequisite: ENG 102.

ENG-111 Grammar (5-0-5)

A basic course covering the fundamentals of English grammar. Emphasis is on grammar and sentence structure. Intended to provide the students with the basic tools for their roles in business. This course is primarily designed for students in the Office Technology option. Prerequisite: None.

ENG-204 Oral Communication (3-0-3)

A study of basic concepts and principles of oral communications. Emphasis is placed on the speaker's attitude, diction, voice, and the application of particular techniques to correct speaking habits and to produce effective oral presentation. Prerequisite: None.

***ENG-205 Written Communications (5-0-5)**

A communications course designed for secretarial students who must learn to initiate written documents for the employer. Primary emphasis is placed upon the development of skills in the techniques of writing business letters, such as credit and collections, complaints, orders, acknowledgements, remittances, inquiries, and answers to inquiries. The student will also learn to write business reports based upon the accumulation of primary data and to summarize business conferences. Prerequisite: ENG 102.

ENG-206 Business Communication (3-0-3)

Develops skills in techniques in writing business communications. Emphasis is placed on writing action—sales letters and prospectuses, business reports, summaries of business conferences, letters involving credit, collections, adjustments, complaints, order acknowledgements, remittances, and inquiries. Prerequisite: ENG 102.

ENG-210 Independent Readings (0-3-1)

This course is designed to promote an interest in reading, especially reading outside the student's major area, to give the students an opportunity for discussion of current and classic works in the following 3 areas: North Carolina Fiction (since 1850), Southern Literature (modern) and Appalachian Literature. Prerequisite: None.

ENG-1102 Communication Skills (3-0-0-3)

Designed to promote effective communication through correct language usage in speaking and writing. Prerequisite: ENG 100.

ENV-100 Man and His Environment (3-0-3)

A study of the "environmental crisis" including topics such as depletion of our nation's energy reserves; efforts to control pollution, and methods of population control. Solid waste disposal and recycling, sewage treatment, and industrial roles in the causes and controls of air, water, and thermal pollution are covered to the extent that the student will have a working knowledge of factors essential to man's environment. Prerequisite: None.

ENV-110 Man and Ecology (3-3-4)

A study of how man has influenced ecology and what he must do in order to insure his survival. Depletion of natural resources, rampant pollution, and uncontrolled population are main topics. The student is involved in local ecological issues, in visits to local industry, and in making an "environmental scrapbook" to be able to understand how we are part of the problem and solution. Prerequisite: None.

HEV-1101 Diesel Engine Theory and Practice (3-0-12-7)

This course is designed as an introduction to the most common types of diesel engines. Each student will be subjected to the principles and theory of the diesel engine and required to work with several different types of engines. As the engines are rebuilt the proper use of hand tools and instruments will be taught. Standard procedures will be used in all engine work. Methods of checking the various parts of the engines will be employed.

HEV-1102 Diesel—Electrical, Fuel, Lubricating and Cooling Systems (5-0-12-9)

This course continues from the engine course and will subject the student to the electrical system, fuel system, and lubricating systems. Each area will be treated as an individual unit. Each student will compare the various systems of heavy equipment. Preventive maintenance will be stressed in all areas. Types of fuel and the importance of pure and clean fuel will be taught. Tools, instruments, and machines related to these units will be presented. Prerequisites: HEV 1101, MEC 1101.

HEV-1103 Diesel—Hydraulic Systems, Steering, Suspension, Braking, Power Train, Injector Testing and Servicing (3-0-15-8)

This course continues from the engine course and will advance the student into the actual hydraulic systems, steering suspension, braking, cooling system, and injector servicing and testing. Each subject area will be treated as an individual unit taught separately. Each student will be required to study the difference in systems on various pieces of equipment. Tools, machines, and instruments used in the various aspects of this work will be presented. Prerequisite: HEV 1102.

HEV-1105 Diesel—Service and Repairs (3-0-9-6)

This course is constructed to require students to utilize all tools, instruments, and machines for analysis of all aspects of service and repair. The procedures employed in service and repair will be the same as expected in the industry. Each student will be expected to show individual ability and initiative in determining the troubled area of heavy equipment. Prerequisite: HEC 1103.

HEV-1107 Power Train Systems**(2-0-6-4)**

This course is designed to go into all types of power trains in heavy equipment. A study of the theory of power trains will be presented and applications of maintenance and repair will give each student an opportunity to review various types of power trains. Actual experience in the operation of power trains will be required to give each student an overview of a variety of experiences. Special tools and instruments used in maintenance and repair of power trains will be presented.

HRM-101 Hospitality Orientation**(3-0-0-3)**

Traces the growth and development of the hospitality industry from early inns to modern day food and lodging complexes that have become an integral part of our society. This course offers the student an overview of the hospitality industry; its size and scope; nature and scope of the market it serves; types of establishments it includes; how hotels, and restaurants are organized; purposes and functions of each department within the hospitality operation. Emphasis will be placed on giving the student an insight into the problems in the hospitality industry and the importance of sound relationship with both the public and other operations within the industry. Prerequisite: None.

HRM-104 Food Purchasing I**(3-0-0-3)**

The student studies the functions and administrative operation of the food buyer's department in hotels and restaurants. Various methods for purchasing including market studies, comparative price buying, yields, and quality control will be discussed. A study of the following food items will be made and specifications will be developed: fresh fruits and vegetables, processed fruits and vegetables, cereal products, beverages, and miscellaneous groceries.

HRM-106 Front Office Procedures/Hotel Accounting*(5-2-6)**

This course will present a study of the various aspects of the front office of the hotel and motor lodge. This will include the procedures in registration, night auditing, transcript preparation, daily reports, and accounting for all guests on the premises. A study of all office machines used in the field will be presented as well as standard check-in and check-out procedures and telephone requirements, reservations, and room service will be presented. A great deal of emphasis will be placed upon the crucial human and public relations responsibilities of the front office staff.

This course will also present a study of all forms, practices, and procedures required in accounting systems in hotels. Prerequisite: BUS 120.

HRM-108 Food Cost Control**(3-0-0-3)**

The student will be instructed in food cost accounting techniques as they relate to purchasing, receiving, storing, issuing, production, revenue, and inventory controls. Through use of case studies which will include menu and portion costing, food cost percentages, cost control records forecasts, and sales histories, the student will utilize these techniques in the actual operational sense. The student will be given an understanding of the importance of food cost control and the various techniques which relate to it as management tools. Prerequisite: MAT 109.

HRM-109 Food Purchasing II**(3-0-0-3)**

The student studies receiving and issuing techniques, storeroom operation, requisitioning, and record keeping as it relates to a foodservice operation. Government grading of food items and price buying will be discussed. Importance of analysis of end use of a food product as it relates to the quality of the food purchased will be shown. A study of the following food items will be made and specifications will be developed: milk and dairy products, fats and oils, poultry, eggs, and meats (beef, pork, veal, and lamb).

HRM-110 Supervised Work Experience*(2-40-6)**

This course is planned to give the student an opportunity to work in the industry and gain practical experience. Jobs will be within the local economy. *Students will return to campus for periodic seminars.* Prerequisite: Successful completion of major courses through 3rd quarter or the Department Chairperson's approval.

HRM-206 Business Management in Hotels and Restaurants (3-0-3)

A brief trip into the various areas in which an executive functions in the Hospitality Industry. Approaching the responsibilities of management with maturity, developing the organization, exploring the planning process, formulating personnel policy, use of accounting for decision making, the marketing approach to business development, and the importance of systems and controls are covered. A research paper relating to one of the functional areas is required.

HRM-207 Laws of Innkeeping (5-0-5)

Presents a highly technical subject in non-technical language. The course is designed to help the student understand the attitudes of the courts when an innkeeper is involved in litigation, and to create an awareness of the many responsibilities which the law imposes upon the innkeeper. The emphasis in this course is upon the reason for the rules of law and the values of interests involved. The object is to give the student an understanding and a sense of balance rather than a series of specialized rules to memorize. Prerequisite: BUS 115.

***HRM-208 Supervisory Housekeeping I (3-2-4)**

Provides the student with a basic foundation in the principles of hotel-motel housekeeping. The course will provide thorough training in planning and implementing objectives, staffing and scheduling, work methods and improvements, cleaning supplies, maintenance equipment and procedures, layout and safety. Practical application of all principles will be provided for in the college's own luxurious Mountain Tech Lodge. Prerequisite: None.

HRM-209 Personnel Management in the Hospitality Industry (3-0-0-3)

Gives to the student an acute awareness of the problems in an industry which offers service to the public performed by many employees; the problems of labor supply, selection, training, promotion, and morale. This course is really a compilation of the principles and practices already found to be of great value in hotels, and restaurants in the management of employees. Emphasis is placed upon the general principles which may be applied in any size operation, from department heads to general manager of a large hotel. The needs and purposes of the employer, the welfare and desires of the employees and the interest and demands of the community will be taken into account as they influence employer-employee relations. Prerequisite: First Year Curriculum.

HRM-210 Supervisory Housekeeping II (0-2-1)

Using the college's ongoing lodge operation as a practical laboratory, this is a "real-time" experiential lab, designed to develop and hone the students' housekeeping abilities, skills, and management concepts. Specialized and individualized projects will be assigned by the faculty. Prerequisite: HRM 208.

HRM-211 The Financial Ingredient in Foodservice Management (3-2-4)

Financial controls based on good accounting data are indispensable to the success of any business enterprise. This course reviews the history of the industry and finance, background of double entry bookkeeping, and how it is applied in actual practice. Demonstrates the use of accounting techniques in analyzing business performance, budgeting, cost control, and profit planning. Prerequisite: Completion of first year curriculum or approval of Dept. Chairperson.

HRM-212 Sales Promotion and Advertising in Hotels and Restaurants (2-2-3)

This course is designed to present a study of the advertising media used by hotels and restaurants. Methods and practices used to establish a favorable image and gaining public recognition will be presented. The civic responsibilities of the Hospitality Industry and social activities, such as conventions and special functions will be considered. Promotional projects used to advertise services will be carried out. Prerequisite: First Year Curriculum.

HRM-213 Food Service Sanitation**(3-0-3)**

Sanitation is a subject of significance for the Foodservice Industry. This course deals with the basic facts of sanitation and how to prevent food-borne illness through an understanding and implementation of the principles of food protection. The N.I.F.I. (National Institute for the Foodservice Industry) Certificate will be granted upon successful completion of this course.

HRM-214 Layout and Design I*(1-2-2)**

Students apply knowledge from previous courses and practical life experiences in this precursor for Engineering Layout and Design II. Using given parameters in an "honors" environment, students develop a basic menu concept and pattern, recipe index, functionally based equipment analysis, and specifications manual. Prerequisite: First year curriculum or approval of Department Chairperson.

HRM-215 Beverage Cost Control*(3-0-3-4)**

Offers a systematic study of the principles of effective beverage cost controls. This covers the entire beverage operation from purchasing, receiving and storage, the preparation, service, and most important, sales and inventory accountability. Particular emphasis will be placed upon calculating beverage costs and establishing standards of preparation and service. The course will concisely sum up the knowledge and principles of beverage cost controls that have taken operators years to learn by practical experience. In order to demonstrate how the principles are applied in a practical situation, a complete beverage department and cost accounting system has been created. Prerequisite: First Year Curriculum.

HRM-216 Layout and Design II*(2-4-4)**

In this continuation of HRM 214, students use established procedures to design and layout the kitchen, dining room, function room, lobby area, and representative sleeping rooms of a typical motor hotel operation using 1/4" scale drawings. The student prepares a comprehensive oral defense of the projects of both courses. Prerequisite: HRM 214.

HRM-217 Supervisory Housekeeping III**(0-2-1)**

This course is a continuation of HRM 210. Prerequisite: HRM 210.

ISC-102 Industrial Safety**(3-0-3)**

Problems of accidents and fire in industry. Management and supervisory responsibility for fire and accident prevention. Additional topics cover accident reports and the supervisor; good housekeeping and fire prevention; machine guarding and personnel protective equipment; state industrial accident code and fire regulations; the first aid department and the line of supervisory responsibility; job instruction and safety instruction; company rules and enforcement; use of safety committees; insurance carrier and the Insurance Rating Bureau, Occupational Safety & Health Act (OSHA); and advertising and promoting a good safety and fire prevention program. Prerequisite: None.

ISC-202 Quality Control**(3-2-4)**

Principles and techniques of quality control and cost saving. Organization and procedure for efficient quality control. Functions, responsibilities, structure, costs, reports, records, personnel and vendor-customer relationships in quality control. Sampling inspections, process control and tests for significance. Prerequisite: None.

ISC-203 Time and Motion Study*(3-2-4)**

Principles of motion economy, tools for motion study, time study methods and practice; standard data and formula construction; use of methods-time measurements as a substitute for time studies. Prerequisite: None.

ISC-209 Plant Layout**(3-2-4)**

A practical study of factory planning with emphasis on the most efficient arrangements of work areas to achieve lower manufacturing costs. Layouts for small and medium-sized plants, layout fundamentals, selection of production equipment and materials handling equipment. Effective management of men, money and material in a manufacturing operation. Prerequisite: Consent of Faculty Advisor.

ISC-211 Work Measurement**(3-2-4)**

Principles of work simplification including administration of job methods improvement, motion study fundamentals and time study techniques. Use of flow process charts; multiple activity charts, operation charts, flow diagrams and methods evaluation. Prerequisite: ISC 203.

MAT-090 Guided Mathematics I**(5-0-5)**

Topics include manipulation of whole numbers, decimals, fractions, and percentages with practical problems illustrating each operation. In addition, the relationships between percentages, fractions, and decimals are covered. Prerequisite: None.

MAT-091 Guided Mathematics II—Practical Geometry**(5-0-5)**

Introduction to basic geometry including areas of plane figures, angles, volume and surface areas. Also included is an introduction to the metric system. Prerequisite: None.

MAT-092 Guided Mathematics III**(5-0-5)**

This course is a review of arithmetic, including the number system, numbers in various bases, operations with integers, addition, subtraction, multiplication, division, common and decimal fractions, percentages, powers and roots, the metric system, basic plane and solid geometry. Prerequisite: None.

MAT-093 Guided Algebra I**(3-0-3)**

Topics include basic concepts and operations of algebra; algebraic symbols, signed numbers, equations of first degree, with practical applications. Also included are addition, subtraction, multiplication and division of polynomials, exponents and factoring of polynomials with quadratic equations solved by factoring, systems of linear equations, and operations with radicals. Prerequisite: MAT 090 or equivalent.

MAT-094 Guided Algebra II**(3-0-3)**

This course covers systems of first degree equations in two variables, graphing equations in rectangular coordinate system, polynomial fractions, irrational numbers, solving fractional and quadratic equations with rational and irrational roots and complex numbers and inequalities. Equivalent to Algebra II. Prerequisite: MAT 093 or equivalent.

MAT-100 Basic Mathematics**(5-0-5)**

Introduction to mathematics including operations with numbers, fractions, percent, dimensional analysis, signed numbers, elementary algebra, linear equations, basic plane and solid geometry with emphasis on applications. Prerequisite: entrance requirements.

MAT-101 Algebra and Trigonometry I**(5-0-5)**

Number systems of various bases are introduced. Fundamental algebra operations, and rectangular coordinate system, as well as fundamental trigonometric concepts and operations are introduced. The application of these principles to practical problems is stressed. Prerequisite: MAT 100.

MAT-102 Algebra and Trigonometry II**(5-0-5)**

A continuation of MAT 101. Advanced algebraic and trigonometric topics include quadratics, logarithms, determinants, matrices, progressions, the binomial expansion, complex numbers, solution of oblique triangles and graphs of the trigonometric functions. Prerequisite: MAT 101.

MAT-103 Analytical Geometry and Calculus I**(5-0-5)**

The fundamental concepts of analytical geometry, differential and integral calculus are introduced. Topics included are graphing techniques, geometric and algebraic interpretation of the derivative, differentials, rate of change, the integral and basic integration techniques. Applications of these concepts to practical situations are stressed. Prerequisite: MAT 102.

MAT-105 Introduction to Algebra (3-0-3)

This course stresses algebraic fundamentals including algebraic terms and laws, solution of first degree equations, and statement problems. Fundamental statistical methods will be introduced. Prerequisite: None.

MAT-106 Introduction to Mathematics (3-0-3)

This course embodies an introduction to mathematics including operation with whole numbers, fractions, per cents, metric terminology, elementary algebra, and statistics with emphasis on practical application involved in the Allied Health field.

MAT-108 Business Arithmetic (5-0-5)

A review of the fundamental processes; addition, subtraction, multiplication and division of whole numbers, common fractions and decimal fractions; and percentages. Topics covered include interest and bank discounts, payroll records, taxes, retailing costs, markups and discounts.

MAT-109 Business Math, Hospitality Indus. (5-0-5)

This course focuses on the essentials of mathematics required in the food service/lodging industry. Topics covered include arithmetic operations with whole numbers; rational numbers, decimals, and percentages. Fundamental principles of business mathematics are used in practical problems of the food service/lodging industry.

MAT-110 Business Mathematics (5-0-5)

This course is designed to provide a review of the fundamentals of arithmetic. The four arithmetic functions will be applied to whole numbers, common fractions, and decimal fractions. Problems dealing with percents, ratio and simple interest will be solved. Use of calculators will be stressed in the second half of the course. Prerequisite: None.

MAT-112 Mathematics of Finance (3-2-4)

This course consists of practical application of business financial transactions involving analysis of statements, interest, present value, yield, discount, compound interest, annuities, extinction of debt and depreciation. Use of modern calculating equipment will be employed. Prerequisites: MAT 105 or MAT 100.

MAT-121 Numbering Systems and Boolean Algebra (3-0-3)

It is a study of various numbering systems with emphasis on the binary, octal and hexadecimal as related to one another, the decimal system, and computers; conversions from one system to another; arithmetic operations in non-decimal systems; elementary logic; and boolean algebra. Prerequisite: None.

MAT-201 Calculus II (5-0-5)

A continuation of MAT 103. More advanced concepts of differentiation and integration are considered. Included are derivatives of the trigonometric function, exponential and logarithmic differentiation and integration, advanced integration technique, polar equations, parametric equations. Prerequisite: MAT 103.

MAT-204 Applied Mathematics (5-0-5)

A study of geometric principles and trigonometry as related to engineering and related shop applications. Emphasis will be placed on practical application of geometric theorems, right triangle and oblique triangle trigonometry and dimensional analysis. Prerequisite: MAT 102.

MAT-214 Statistics (5-0-5)

This is an introduction to statistics with emphasis on data analysis including frequency distributions, measures of location and variation; and probability. Practical problems support the theory. Prerequisite: MAT 100 or MAT 105.

MAT-1101 Fundamentals of Mathematics (5-0-0-5)

Analysis of Basic Operations: addition, subtraction, multiplication and division. Fractions, decimals, powers and roots, percentages, ratio and proportion. Introduction to algebra used in trades. Practicable applications. Prerequisite: None.

MAT-1103 Geometry**(3-0-0-3)**

Fundamental properties and definitions; plane and solid geometric figures, selected general theorems, geometric construction, areas and volumes of solids. Geometric principles are applied to shop operations. Prerequisite: MAT 1101.

MAT-1104 Trigonometry**(3-0-0-3)**

Practical problems in Geometry relating to machine shop are reviewed. Trigonometric ratios, solving problems with right triangles and solution of practical problems are covered in this course. Solution of oblique triangles will be introduced. Prerequisite: MAT 1103.

MAT-1123 Machinist Mathematics**(3-0-0-3)**

Introduce tapers and wedgers, sine bar, dovetails, threads, angle cuts, hole-circle spacing, gears, and indexing with emphasis on application to the machine shop. Practical applications and problems furnish the trainee with experience in geometric propositions and trigonometric relations to shop problems. Prerequisite: MAT 1104.

MAT-1203 Trigonometry**(5-0-0-5)**

A basic review of mathematics will form a foundation for a study of trigonometry of right triangles, oblique triangles, and dimensional analysis. Applications to typical problems found in the tool and die shop will be presented and solutions will be found by using mathematics. Prerequisite: MAT 1123.

MAT-1204 Compound Angles**(5-0-0-5)**

The application of trigonometry and geometry are presented to solve compound angle problems. This course will use as many practical problems as possible to enable the student to work with typical problems. Prerequisite: MAT 1203.

MEC-101 Machine Processes*(2-4-4)**

A course to acquaint the student with basic machine tools of industry through lectures, demonstrations, and hands-on practice. It will include the study of safety practices; measuring instruments; characteristics of basic machine tools, materials, and cutting tools; and actual experience on lathe, drill press, milling machines, shaper, and grinder. Prerequisite: None.

MEC-105 Statics*(5-0-5)**

Concepts and basic principles of statics. Parallel concurrent, and non-concurrent force systems in coplanar and noncoplanar situations. Concepts of friction. Prerequisites: MAT 102, PHY 102.

MEC-111 Manufacturing Processes*(3-3-4)**

An introduction to the field of manufacturing processes to include material properties, metal stamping and drawing, casting, forging, die casting, metal joining, heat treating, plastic processing, adhesives, metal finishing, and protective coatings. Prerequisite: None.

MEC-205 Strength of Materials*(5-0-5)**

Study of the basic principles by which stresses and strains are induced in beams, members and structures by imposed loads. Analyses of stresses are made as applied to beams, columns, thin-walled cylinders, spheres, riveted and welded joints, and machine components. Prerequisites: MEC 105, MAT 102.

MEC-206 Dynamics**(3-0-3)**

Study of change of position or motion as it affects machines and their mechanical components. The subjects of mathematical vectors and kinematics used for design of mechanisms and cams, etc., are introduced. Dynamics formulae are presented and explained. Work problems are provided. Prerequisites: MEC 105, MAT 103, and MEC 205.

MEC-208 Machine Design I (4-0-4)

Study of factors affecting the design of machine elements. Empirical and theoretical equations, practical considerations, and procedures of designing are included. Students are given practice in applying knowledge of strength and properties of materials, manufacturing processes, economics of production, safety, and elements of good design through problem assignments. Prerequisite: MEC 205.

MEC-209 Machine Design II (4-0-4)

A survey course with the selection of components in mechanical design, such as power trains, gearing, bearings, shafts, keys, springs, belts, couplings, clutches, brakes, etc., through the use of design information, standards, handbooks, etc. Prerequisite: MEC 208.

***MEC-210 Physical Metallurgy (3-3-4)**

Introductory course in metallurgy, a basic study of the properties of metals and alloys. Analysis of the structure of metals and alloys. Atomic structure and its effect on physical properties. Solid (crystalline) structures, methods of designing crystal planes, liquid and vapor phases, phase diagrams, and alloy systems. Laboratory work to include useful field trips to local industries. Prerequisites: PHY 101, MAT 102.

MEC-211 Basic Physical Metallurgy (3-3-4)

An introductory course in the uses of metals, alloys and plastics, together with the basic necessary theory for proper materials application. Basic metallurgical theory will be briefly presented. Basic plastics will also be covered. The available common steels and non-ferrous alloys will be discussed. Laboratory work will include physical testing of metal specimens, reading of test results, and field trips to related local industries. Prerequisite: PHY 101.

MEC-212 Practical Automation (3-0-3)

An introductory evaluation of automation as it is interpreted and practiced by American Industry. The fundamentals of the uses and means of automation in industrial productivity is covered. The nature and use of control devices and systems will be studied in more detail to prepare for understanding automation. Prerequisite: None.

MEC-220 Power Systems (3-2-4)

Survey of energy conversion systems such as the internal combustion engine, power plant, gas turbine, and refrigerator. Basic thermodynamic principles and laws introduced. Prerequisites: PHY 102, MAT 103.

MEC-235 Hydraulics and Pneumatics (3-3-4)

The basic theories of hydrostatic and pneumatic systems. Combinations of systems in various circuits. Basic designs and functions of circuits and motors, controls, electrohydraulic servomechanisms, plumbing, filtration, accumulators and reservoirs. Laboratory work to include field trips to local industries. Prerequisite: PHY 102.

MEC-1101 Elementary Hydraulic Principles (2-3-0-3)

Students will be introduced to the principles of hydraulic systems as they apply in the heavy equipment area. The theory of hydraulic systems must be understood thoroughly before the students can progress into actual work on hydraulic systems. Various aspects of heavy equipment will be used to demonstrate these principles and theories. Prerequisite: None.

MEC-1115 Treatment of Ferrous & Non-Ferrous Metals (1-0-3-2)

Investigate the properties of ferrous metals and tests to determine their uses. Instructions will include some chemical metallurgy to provide a background for the understanding of the physical changes and causes of these changes in metals. Physical metallurgy of ferrous metals, producing iron and steel, theory of alloys, shaping and forming, heat treatments for steel, surface treatments, alloy of special steel, classification of steels, and cast iron will be topics for study. Prerequisite: None.

MEC-1124 Metallurgy (3-0-0-3)

An introductory course in metallurgy, a basic study of properties of metals and alloys and their purpose, standards and classification, heat treatment, and trouble shooting. A thorough knowledge of the effects of heating and cooling is very essential to the welding student. Prerequisite: None.

MEC-1203 Metallurgy (3-0-0-3)

This is a study of a special group of steels used by the tool and die industry. Students are concerned with the selection, machining, and heat treating of these steels. Trouble-shooting to find the reason for possible failure of the steel and the remedy required will be an important part of this course. Prerequisite: None.

MEC-1209 Hydraulics and Pneumatics (3-0-0-3)

A basic study of the principles of power hydraulics. Component parts such as reservoirs, strainers, filters, piping and fittings, motors, pumps, and valves will be thoroughly studied. Practical circuits and systems will be covered especially as they are used in the tool and die industry. Prerequisite: None.

***MES-1101 Machine Shop I (3-0-12-7)**

An introduction to the machinist trade and the potential it holds for craftsmen. Deals primarily with the identification, care and use of basic hand tools and precision measuring instruments. Elementary layout procedures and processes of lathe, drill press, grinding (off-hand) and milling machines will be introduced both in theory and practice. Prerequisite: None.

***MES-1102 Machine Shop II (3-0-12-7)**

Advanced operations in layout tools and procedures, power sawing, drill press, surface grinder, milling machine shaper. The student will be introduced to the basic operations of the cylindrical grinder and will select projects encompassing all the operations, tools and procedures thus far used and those to be stressed throughout the course. Prerequisite: MES 1101.

***MES-1103 Machine Shop III (3-0-12-7)**

Advanced work in the engine lathe, turning, boring and threading machines, grinders, milling machine and shaper. Introduction to basic indexing and terminology of spur, helical, and worm gears and wheels. The trainee will use precision tools and measuring instruments such as vernier height gages, protractors, comparators, etc. Basic exercises will be given on the turret lathe and on the tool and cutter grinder. Prerequisite: MES 1102.

***MES-1104 Machine Shop IV (3-0-12-7)**

Development of class projects using previously learned procedures in planning, blueprint reading, machine operations, final assembly and inspection. Additional processes on the turret lathe, tool and cutter grinder, cylindrical and surface grinder, advanced milling machine operations, etc. Special procedures and operations, processes and equipment, observing safety procedures faithfully and establishing of good work habits and attitudes acceptable to the industry. Prerequisite: MES 1103.

***MES-1105 Introduction to Numerical Machine Tools (2-2-0-3)**

This introduction to numerical control machine tools and the potential for those working in machine shops includes applications of numerical control, dimensioning system and axis designation, tape codes and formats, part programming fundamentals, and advanced programming concepts. Prerequisite: MAT 1104 or proficiency in geometry and trigonometry.

***MES-1112 Machine Shop Processes (1-3-0-2)**

An introduction to machine shop dealing with the identification, care and use of basic hand tools and precision measuring instruments. Elementary layout procedures and processes of lathe, drill press, grinding (off-hand) and milling machines will be introduced both in theory and practice. Prerequisite: None.

***MLT-101 Clinical Experience I (4-0-6-6)**

An introduction into clinical laboratory techniques and the functions of the medical laboratory technician. The medical laboratory technician's relationship to the patient and other allied health personnel is defined. Methods and theory of specimen collection is introduced.

MLT-105 Hematology I (2-2-0-3)

Basic theory in clinical hematology including hematopoiesis, principles of cell counting, hemoglobinometry, introduction to anemias, and morphology of normal cells. Prerequisite: MLT 101.

MLS-106 Urinalysis (1-2-0-2)

The study of the formation of urine and urinalysis. The importance of the role urinalysis plays in the diagnosis of disease is emphasized. Prerequisite: BIO 102.

MLT-107 Clinical Chemistry I (1-2-0-2)

A study of the biochemical processes involved in human metabolism, particularly carbohydrates and proteins. The study involves emphasis on methodologies used in the clinical chemistry laboratory. Prerequisite: MLT 101.

***MLT-108 Clinical Experience II (2-0-6-4)**

An overview of each clinical laboratory area is presented with an emphasis on performing routine venipunctures. Prerequisite: MLT 101.

MLT-112 Clinical Chemistry II (1-2-0-2)

A continuation of MLT 107, Clinical Chemistry I, concentrating on electrolytes, blood gases, enzymes, and hormones. Prerequisite: MLT 107.

***MLT-113 Clinical Experience III (0-0-9-3)**

A continuation of performance of venipunctures with the addition of special blood collection procedures. Prerequisite: MLT 108.

MLT-114 Immunohematology I (3-2-0-4)

Principles and theories of immunology and immunohematology including serology, blood group antigens and antibodies. Prerequisite: BIO 102.

MLT-115 Microbiology I (1-2-0-2)

An introduction to the routine techniques of clinical microbiology and the study of gram positive and gram negative cocci. Prerequisite: None.

MLT-116 Microbiology II (2-2-0-3)

A study of glucose fermenting and glucose nonfermenting gram negative bacilli and the various techniques of antimicrobial susceptibility testing. Prerequisite: MLT 115.

MLT-118 Immunohematology II (1-2-0-2)

A continuation of Immunohematology I with an introduction into the selection and processing of donors, preparation and use of blood and blood components, special immunohematology conditions and methodologies. Prerequisite: MLT 114.

***MLT-119 Clinical Experience IV (0-0-6-2)**

A continuation of performance of venipunctures, special blood collection with an emphasis on the pediatric patient. Prerequisite: MLT 113.

MLT-121 Hematology II (1-4-0-3)

A continuation of Hematology I with an emphasis on cell identification. Basic theory and methodologies in hemostasis is introduced. Abnormal cell identification is stressed. Prerequisite: MLT 105.

MLT-201 Microbiology III (1-2-0-2)

A study of the gram positive bacilli, anaerobic bacteria, mycobacteria, fungi and the various microbiological techniques necessary for their identification. Prerequisite: MLT 116.

- *MLT-202 Clinical Experience V** (0-0-27-9)
 Practical application of laboratory skills during supervised rotations through clinical hematology. Prerequisite: MLT 119.
- MLT-205 Hematology III** (1-2-0-2)
 A continuation of MLT 121 with an emphasis on special hematological procedures through the use of case studies. Prerequisite: MLT 121.
- *MLT-206 Clinical Experience VI** (0-0-27-9)
 Practical application of laboratory skills during supervised rotations through clinical chemistry. Prerequisite: MLT 119.
- MLT-208 Clinical Chemistry Values** (2-0-0-2)
 A correlation of clinical chemistry results with the patient's status and other laboratory results. Prerequisite: MLT 112.
- *MLT-209 Clinical Experience VII** (0-0-27-9)
 Practical application of laboratory skills during supervised rotations through clinical microbiology. Prerequisite: MLT 119.
- *MLT-211 Instrumentation** (0-2-0-1)
 A study of the operating principles and methodologies of laboratory instruments including routine maintenance and quality control. Field trips to various health facilities and industries will be included. Prerequisite: MLT 112.
- *MLT-212 Clinical Experience VIII** (0-0-27-9)
 Practical application of laboratory skills during supervised rotation through blood bank and serology in the clinical laboratory. Prerequisite: MLT 119.
- MLT-220 Parasitology** (1-2-0-2)
 A study of human parasites. Practice in techniques used in identifying parasites in feces and other body specimens. Prerequisite: None.
- MRP-101 Manufacturing Resources Planning I** (4-0-4)
 The components of a manufacturing system and their interrelationships are surveyed. The course will review planning for made-to-order, made-to-stock, and engineered products; will cover the preparation and maintenance of a master production schedule; will survey capacity management, shop floor control, purchasing, forecasting, inventory management, and materials requirements planning. The course will discuss the use of the computer in these functions. MRP terminology is stressed. Prerequisite: None.
- MRP-102 Manufacturing Resources Planning II** (4-0-4)
 This course is a continuation of MRP 101. The learner will be introduced to applications of MRP occurring in local industry and in models perfected by the industry. Prerequisite: MRP 101.
- MRP-103 Materials Requirements Planning** (4-0-4)
 This course covers the fundamental concepts and principles in time-phased material requirements planning. The key functions of inventory management, capacity requirements determination, and priority planning are stressed. The techniques for developing a master schedule and the role of the forecast will be covered in detail. A computer based model will be available. Upon successful completion of the course, the student is encouraged to take the APICS test module on Materials Requirements Planning. Prerequisite: MRP 102.
- MRP-105 Inventory Management** (4-0-4)
 The course will encompass the principles, concepts, and techniques for deciding what to order, how much to order, when to order, and how and where to store. Major course objectives will cover the proper balance to maintain to achieve the desired level of customer service, investment in inventories, and proper timing in the management and purchasing requirements. Upon successful completion of the course, the student is encouraged to take the APICS test module on Inventory Management. Prerequisite: MRP 102.

MRP-201 Capacity Management**(3-0-3)**

The course will cover the function of establishing, measuring, monitoring, and adjusting limits or levels of capacity in order to execute all manufacturing schedules. The process of determining the necessary people, machines, and physical resources to meet the production objectives of the firm will also be covered. Long-range, medium-range, and short-range time horizons will be identified. Upon successful completion of the course, the student is encouraged to take the APICS test module on Capacity Management. Prerequisite: MRP 205.

MRP-203 Master Planning**(5-0-5)**

The course is divided into two major sections: forecasting and master production scheduling. Terminology is stressed throughout the course. The techniques used in and principles of forecasting will be presented. Master production scheduling activities of demand management, production planning, final assembly scheduling, and master production scheduling will be covered. Upon successful completion of the course, the student is encouraged to take the APICS test module on Master Planning. Prerequisite: MRP 102.

MRP-205 Methods, Standards & Routings**(4-0-4)**

This course will present a systematic, practical, and yet scientifically correct treatment of work methods, standards, and routings used in today's manufacturing concerns. Prerequisite: MRP 102.

MRP-207 Shop Floor Control**(3-0-3)**

The course covers the most important principles and techniques of a shop floor control. The student will have a working knowledge of the approaches used by managers to plan, schedule, control, and evaluate the effectiveness of shop production operation. The course covers process plants, volume production lines, and industries that operate a shop floor control environment. Upon successful completion of the course, the student is encouraged to take the APICS test module on Production Activity Control. Prerequisite: MRP 205.

MRP-209 Factory Layout and Design**(3-0-3)**

A practical study of factory planning with emphasis on the most efficient arrangement of work areas to achieve lower manufacturing costs. Layouts for small and medium-sized plants, layout fundamentals, selection of production equipment and materials handling equipment. Effective management of men, money, and materials in a manufacturing operation. Prerequisite: None.

MRP-211 Purchasing**(4-0-4)**

The learner will be able to accomplish entry-level functions in a purchasing department. The course introduces the purchasing role in an organization along with the techniques of vendor selection and development: buying from the right source, at the right time, and in the right quantity. Prerequisite: MRP 102.

MRP-216 Advanced Projects**(3-0-3)**

The student will be assigned problems and the responsibility for documenting current research. A bibliography including texts, journals, and discussions with practitioners must be developed. Project progress will be critiqued weekly by the class and instructor. Prerequisite: Satisfactory completion of course work.

MRP-217 Certification Review**(2-3-3)**

The courses designed to prepare the students for APICS certification provide the basis to review for subsequent testing. A certified instructor will present the primary contents of each test module. Prerequisite: MRP 103, 105, 203, 205, 207.

NUR-101 Fundamentals of Nursing I**(5-4-7)**

This course provides an introduction to basic concepts of health and the role of the technical nurse as a member of the contemporary health team. Emphasis is placed upon basic human needs, psychosocial reactions to illness, hazards of immobility, principles of asepsis and the nursing process as a means of planning and implementing care. Medical terminology is integrated throughout. Concurrent laboratory experience provides time for the acquisition of skill in the basic nursing procedures. Prerequisite: None.

NUR-103 Fundamentals of Nursing II*(5-8-9)**

This course incorporates two units. Normal nutrition encompasses study of the basic four food groups and body requirements of the basic nutrients in health. In basic pharmacology the student learns about broad groups of therapeutic agents, gains proficiency in utilizing the apothecary-metric system conversion in determining dosage and administers medications by the various routes to patients. Hospital experience provides the opportunity for the student to implement basic nursing care. Prerequisites: CHM 101, NUR 101.

NUR-105 Fundamentals of Nursing III**(5-8-9)**

Centering around the principle of homeostasis, this course includes the study of body defenses against morbidity and progresses to the fundamentals of neoplastic disorders and fluid-electrolyte imbalance. The student learns the basic techniques for intravenous and oxygen therapy and pre and post operative care. In the hospital setting, the student more skillfully adapts care to meet individual patient needs. Prerequisites: BIO 102, CHM 101, NUR 103.

NUR-125 Nursing Procedures**(2-0-2)**

This course acquaints the student with nursing procedures and techniques used in the general care of the patient with emphasis on the role of the radiologic technologist in various nursing situations.

NUR-206 Psychiatric Nursing*(4-6-6)**

In this course, the fundamental dynamic concepts of the mind and mental health, the agencies of the mind, and personality adjustment mechanisms are reviewed as a background for the study of the mental disorders—neuroses, psychoses, and personality disorders. Emphasis is placed upon symptomatology and treatment and especially upon the related nursing care. Principles of a therapeutic nurse-patient relationship are learned, and an opportunity to apply them is provided in a local psychiatric hospital. Prerequisites: PSY 203, NUR 105.

NUR-207 Maternity Nursing*(4-6-6)**

Maternity Nursing centers on the needs of mothers and newborn infants during the reproductive experience. The student is assisted in viewing these individuals within the structure of the family and appreciating the meaning of reproduction of the family.

Subject material focuses on the normal aspects of the childbearing process with brief consideration given to the major complications of the maternity cycle and the common deviations of the newborn. Throughout the course of study the student is assisted in the acquisition of knowledge and nursing skills necessary for the promotion of comfort, health and safety of the mother and her infant. Prerequisites: BIO 103, NUR 105.

NUR-208 Growth and Development**(3-0-3)**

This course is designed to give the student an understanding of the growth and development of the child from infancy through adolescence. Emphasis is placed on the recognition of normal responses of the child in physical growth, motor and language developments, moral and social development, and play habits. Prerequisite: None.

***NUR-210 Nursing in Physical and Mental Illness I (8-16-16)**

This course is designed to guide the student in acquiring knowledge and skills in order to meet the physical, psychological and social needs of the adult and pediatric patient with respiratory, cardiac and integumentary problems. Nutrition, drug therapy and nursing of children are correlated with appropriate course content. The student initiates nursing care for the patient preoperatively, observes the nursing activities in the operating room, and continues this experience by giving direct care to the patient during his immediate recovery period. Prerequisites: NUR 206 and NUR 207.

***NUR-211 Nursing Trends and Professional Ethics (3-0-3)**

Attention is given to the history and organizational structure of nursing and to the development of the new graduate's responsibilities and opportunities in the area of employment, involvement in continuing education, and the relationship of the ADN graduate to the health team members. Prerequisite: None.

***NUR-212 Nursing in Physical and Mental Illness II (8-16-16)**

This course is designed to guide the student in acquiring knowledge and skills in order to meet the physical, psychological and social needs of the adult and pediatric patient with problems involving metabolic processes from the availability of nutrients to the excretion of waste materials. Nutrition, drug therapy and nursing of children are correlated with appropriate course content. Through selected adult and pediatric experiences, the student is given the opportunity to utilize the nursing process in implementing care. Prerequisites: NUR 208 and NUR 210.

***NUR-213 Comprehensive Nursing (2-0-2)**

The purpose of this course of study is to present the conceptual framework of team nursing and to incorporate its principles into a planned, clinical experience for senior students. The student is given the opportunity to plan, direct, implement, and evaluate total patient care for individuals and groups. Prerequisite: NUR 212.

***NUR-214 Nursing in Physical and Mental Illness III (8-18-17)**

This course of study is concerned with the pathological alterations and nursing needs of adult and pediatric patients with problems affecting the ability to respond to stimuli and temporary or permanent loss of motion. Nutrition, drug therapy and nursing of children are correlated with course content. Nursing practice is goal directed to stimulate the student to think critically, to solve nursing problems, to make appropriate nursing judgements, and to objectively evaluate personal actions based upon physical, psychological and social factors. Prerequisite: NUR 212.

NUT-202 Nutrition (3-0-0-3)

A study of basic nutrition and dietetics related to personal and community health. Prerequisite: CHM 101.

OTC-100 Spelling and Punctuation Study (3-0-3)

A course designed to help the student overcome spelling difficulties and build punctuation ability. Concentration will be placed on rules of spelling, use of the dictionary, and punctuation study. Prerequisites: ENG 111 or 101.

OTC-110 Practical Office English (3-0-3)

This course gives the prospective office technologist practice in the rudiments of fundamental English, including punctuation, capitalization, sentence structure, spelling, and syllabication of typewritten work. It incorporates the use of office reference books in conjunction with the office-related practice materials. Prerequisites: ENG 111, OTC 100, OTC 101.

***OTC-111 Information Processing Technologies (1-3-2)**

Designed to introduce the student to the basic operation of several office machines, including bookkeeping-accounting machines, reproduction machines, dictation-transcribing equipment, and word processing equipment. Special emphasis is placed on the proper care of the equipment. Prerequisite: SSC 103.

OTC-116 Filing (5-0-5)

Skill development in records control through instruction in filing principles and theories and actual practice through the use of miniature copies of filing materials; the study of manual and automated systems is included. Prerequisite: None.

***OTC-213 Office Procedures** (3-2-4)

This course is designed to give the student training in the various skills necessary in performing office routines. Prerequisites: OTC 105, OTC 111 & OTC 116.

OTC-214 Machine Transcription (2-3-3)

The student will learn how to transcribe mailable letters and other office communications by transcription from machines. The student will be expected to produce from tapes and belts mailable letters which are free from errors of punctuation, spelling and form. Prerequisites: OTC 105, OTC 110, OTC 111.

OTC-216 Payroll Procedures (5-0-5)

A course in payroll recordkeeping including the accounting aspects of maintaining employee earning records, the computation and recordkeeping of deductions, and the preparation of employee and employer reporting forms. Prerequisite: BUS 117.

***OTC-218 Cooperative Education** (0-20-2)

In order to receive credit for OTC 218, the student must secure and successfully complete 220 hours of actual employment in a job approved by the department co-op instructor. This experience should allow the student to relate more meaningfully to the world of work and to a specific place in the world of work. Prerequisite: Successful completion of all course work.

***OTC-220 Seminar on Cooperative Education** (2-0-2)

During the seminar sessions, the working student will discuss the problems encountered in the position and the means to overcome these problems.

OTC-272 Vocabulary Building (2-0-2)

The expansion of the student's active and passive vocabularies is the major goal of this course, with special emphasis given to the vocabulary of business. The study of prefixes, suffixes, root words, synonyms, and homonyms provides the basis for an introduction to selected new words and the foundation for growth in the use of new words and the determination of meanings of previously unknown words. Prerequisite: None.

PED-100 Archery-Badminton (0-3-1)

Approximately five weeks will be spent on each area. Fundamentals of the use of the bow and arrow and aiming methods used in archery. Fundamental skills of serving, forehand swing, and backhand plus familiarization with rules in badminton. Course includes the development of skills through individual instruction and participation.

PED-101 Beginner Tennis (0-3-1)

A course designed to give beginners a thorough knowledge of the history, rules and strategy as well as the fundamental skills of tennis.

PED-102 Intermediate Tennis (0-3-1)

This is a follow-up course to PED 101 with emphasis on game strategy and doubles play.

PED-103 Advanced Tennis (0-3-1)

This course is designed to provide students with an opportunity to place into practice the skills developed in PED 101 and PED 102. Emphasis is placed on actual playing time to sharpen previously learned skills & strategies against players of advanced abilities.

PED-105 Beginner Bowling (0-3-1)

The fundamentals of ball selection, grips, stance and delivery are taught along with rules, history, scoring and the general theory of spare coverage.

PED-106 Intermediate Bowling (0-3-1)

This course provides an opportunity to put into practice the knowledge and skills acquired in PED 105. Instruction is supplemented through films and participation at bowling lanes.

PED-110 Snow Skiing (0-3-1)

The study of the fundamentals of skiing techniques. Emphasis will be on developing skills in christies, parallel skiing, and basic jumps.

PED-115 Beginner Golf (0-3-1)

A course designed for teaching beginners the grip, stance, swing, and use of the various clubs, along with the history and etiquette of play.

PED-116 Intermediate Golf (0-3-1)

Emphasis here is placed on rules and etiquette, procedures for playing and the swings involved. Includes playing time at local courses.

PED-117 Advanced Golf (0-3-1)

This course is designed to provide students with the opportunity to place into practice the skills developed in PED 115 and PED 116. Emphasis is placed on actual playing time at various local golf courses.

PED-120 Beginner Volleyball (0-3-1)

A course designed to include the fundamental skills, history, rules and strategy of the game.

PED-121 Intermediate Volleyball (0-3-1)

This course involves the development of the necessary skills and strategies for playing volleyball. Emphasis is placed on proper techniques of play and development of basic skills used in playing.

PED-122 Advanced Volleyball (0-3-1)

This course is designed to provide students with the opportunity to practice the skills and abilities developed in PED 120 and PED 121. Emphasis is placed on actual playing time to sharpen the previously learned skills and strategies.

PED-125 Beginner Basketball (0-3-1)

A course designed to teach the history, rules and strategy as well as the fundamental skills of basketball.

PED-126 Intermediate Basketball (0-3-1)

This course emphasizes physical conditioning and the necessary skills for participation in basketball games.

PED-126 Advanced Basketball (0-3-1)

A course designed to provide students with an opportunity to place into practice the knowledge, skills, and abilities learned in PED 125 and PED 126. Emphasis is placed on actual playing time to sharpen previously learned skills and abilities.

PED-130 Beginner Physical Fitness (0-3-1)

A course designed to develop the ability to demonstrate vigorous physical action. The course includes endurance, power, strength, and agility with the purpose of continuing these traits into smooth, effective action both at work and in play.

PED-131 Intermediate Physical Fitness (0-3-1)

This course is a continuation of PED 130 and is designed to direct the student in a program of physical development and coordinated movement.

PED-132 Advanced Physical Fitness (0-3-1)

This is a follow-up course to PED 131 with greater emphasis on rhythmic activity and emphasis on a planned program for future fitness.

PED-135 Nature Hiking (0-3-1)

Study includes instruction on how to equip and take care of oneself on the trail, including clothing, hygiene, and necessary equipment. Trail hikes will be taken to practice learned knowledge.

PED-140 Beginner Softball (0-3-1)

A course designed to include the fundamental skills, history and rules of the game.

PED-141 Intermediate Softball (0-3-1)

The course includes the development of necessary skills and knowledge for playing softball. Emphasis is placed on proper techniques and proper strategies for playing softball.

PED-142 Advanced Softball (0-3-1)

The course is designed to provide students with the opportunity to practice the skills and abilities developed in PED 140 and PED 141. Emphasis is placed on actual playing time for practice or previously learned skills and strategies.

PED-145 Fundamental Sports (0-3-1)

A course designed for students who desire participation in a variety of sports activities including basketball, volleyball, archery, badminton, tennis, softball, gymnastics, fitness, bowling, and golf. Emphasis is placed on acquainting the students with the rules and knowledge of each activity so that participation in sports will be stimulated.

PED-150 Beginner Gymnastics (0-3-1)

A course designed for teaching the fundamentals of gymnastics on the parallel bars and mats.

PED-151 Intermediate Gymnastics (0-3-1)

This course is a follow up of PED 150 with emphasis on leadership training on gymnastics equipment.

PED-155 Track & Field (0-3-1)

A course designed to develop knowledge, skill and interest in track and field events.

PED-160 Beginner Weight Training (0-3-1)

A course designed for teaching the basic skills of body development through weight training.

PED-161 Advanced Weight Training (0-3-1)

A continuation of the principles learned in PED 160. The student should gain knowledge of the principles of strength development and improve himself physically.

PHO-201 Introduction to Photography (1-2-2)

Instruction includes the processing and printing of film; photographing scenes, legal aspects of crime photography, preparation of courtroom photo evidence, lighting at a crime scene, care of photographic equipment. Prerequisite: None.

PHY-101 Properties of Matter (3-2-4)

A fundamental course covering basic principles of physics including solids and their characteristics, liquids at rest and in motion, gas laws and applications. Laboratory experiments and specialized problems dealing with these topics are a part of the course. Prerequisite: MAT 100.

PHY-102 Mechanics (3-2-4)

Major areas covered in this course are force, motion, work, energy and power. Instruction includes such topics as vectors and graphic solutions, basic machines, friction and torque. Prerequisites: PHY 101, MAT 101.

PHY-103 Electricity (3-2-4)

Basic theories of A.C. and D.C. including the electron theory and production of electricity by chemical action, friction, magnetism and induction. Industrial application involving the use of voltage, amperage, resistance, horsepower and wattage are major parts of the course. Prerequisites: PHY 101, MAT 102.

PHY-104 Light and Sound (3-2-4)

A survey of the concepts involving wave motion leads to a study of sound, its generation, transmission and detection. The principles of wave motion also serve as an introduction to the study of light, illumination and principle involved in optical instruments. Application is stressed throughout. Prerequisites: MAT 101, PHY 102.

PHY-105 Physics (4-0-4)

This course provides a review of Applied Mathematics and teaches the fundamentals of Electrical and Radiation Physics. Prerequisite: None.

PHY-1100 Industrial Science (3-2-0-4)

An introduction to physical principles and their application in industry. Topics in this course include properties of matter, basic electrical principles, heat, principles of force, motion, work energy, and power. Prerequisite: MAT 1101.

PHY-1101 Applied Science I (3-2-0-4)

An introduction to physical principles and their application in industry. Topics in this course include measurement; properties of solids, liquids, and gases; basic electrical principles. Prerequisite: MAT 1101.

PHY-1102 Applied Science II (3-2-0-4)

The second in a series of two courses of applied physical principles. Topics introduced in this course are heat and thermometry, and principles of force, motion, work, energy, and power. Prerequisite: PHY 1101.

PNE-1111 Introduction to Nursing (2-0-0-2)

This introductory area of the program is to acquaint the student with the role and function of a student practical nurse. An overview of the past in relationship to the present and future trends is included. The role of community resources in meeting health needs is explored and assistance is given in communication skills as they relate to nursing and interpersonal relations. Prerequisite: None.

PNE-1112 Fundamentals of Nursing (8-2-2-10)

This course provides an introduction to the care of patients through a study of the basic daily needs of all persons in sickness and health. Opportunities are provided for learning the principles of nursing. Drug therapy is discussed. Sessions are structured to provide the student with experience in computing drug dosages and administering medications. Prerequisite: None.

PNE-1117 Nutrition (4-0-0-4)

Normal nutrition is taught in this course, as a basis for understanding the dietary needs of patients. Diet requirements for various age groups and the special needs during pregnancy and lactation are studied. Diet therapy is introduced. Prerequisite: None.

PNE-1120 Clinical I Medical-Surgical (0-0-15-5)

This portion of the program consists of care of selected patients in the hospital. Careful supervision is given the student to insure maximum opportunity to develop nursing skills. Assignments are correlated to classroom instruction with emphasis on total patient care. Prerequisites: PNE 1112, PNE 1117 and BIO 111.

***PNE-1122 Medical-Surgical Nursing I (12-0-0-12)**

This course is a beginning study of common illness conditions. Emphasis is placed on application of nursing principles to meet the needs of adult patients with varying degrees of illness and from different socio-economic backgrounds. Stress is placed on nursing needs of patients with alteration of body functions resulting from disorders of body systems. Drug Therapy is included with disorders of each system. Prerequisites: PNE 1112, PNE 1117 and BIO 111.

PNE-1123 Maternal and Infant Care (4-0-0-4)

A family centered approach presenting the theoretical information pertaining to the normal antepartum, labor and delivery, postpartum and neonate. Included are assess-

ments of the basic pathophysiological processes underlying the common discomforts and disorders and the pertinent nursing intervention and implementation. Prerequisite: BIO 111.

***PNE-1124 Pediatric Nursing I (2-0-0-2)**

This course is a study of the normal child. Physical and psychological development in the various age groups is the chief content. Prerequisite: BIO 111.

PNE-1130 Clinical II Obstetrics and Pediatrics (0-0-21-7)

This course is planned to give the student opportunities to develop skills and apply the principles of nursing in the care of the maternity patient, the newborn, and the sick child. Additional learning experiences are planned on selected patients in medical surgical areas. Prerequisites: PNE 1120, 1122, 1123 and 1124.

***PNE-1132 Medical-Surgical Nursing II (10-0-0-10)**

Emphasis is placed on total patient care in this continuation of PNE 1122. Prerequisite: PNE 1122.

***PNE-1134 Pediatric Nursing II (2-0-0-2)**

This course is a continuation of PNE 1124 and is correlated with care of the sick child in the hospital. The purpose is to aid the student to recognize and meet the nursing needs of the sick child. Prerequisites: PNE 1122, 1124.

***PNE-1140 Clinical III Medical-Surgical (0-0-21-7)**

This is a continuation of PNE 1120 and provides the student additional opportunity to improve upon her nursing skills. Instructors supervise students in administration of medications. Prerequisites: PNE 1130 & 1132.

***PNE-1142 Medical-Surgical Nursing III (10-0-0-10)**

Emphasis is placed on total patient care in this continuation of PNE 1132. Prerequisite: PNE 1132.

***PNE-1144 Vocational Adjustment (2-0-0-2)**

This course is structured to assist the individual in making the transition from the role of student to that of a functional member of the health team. Legal and vocational responsibilities are stressed. Prerequisite: 4th quarter status.

POL-103 State and Local Government (4-0-4)

This course is a study of state and local government, state-federal interrelationships, the functions and prerogatives of the branches. Problems of administration, legal procedures, law enforcement, police power, taxation, revenues, and appropriations are included. Special attention is given to North Carolina governments. Prerequisite: None.

PSY-097 Behavioral Development (3-0-3)

This course is designed to provide students with the opportunity to become involved with relating to others and to become more aware of themselves. Activities will deal with vocational, educational, and personal concerns. Various exercises, simulations, and other activities (both group and individual) to carry out these objectives will be utilized. Prerequisite: None.

PSY-101 Introduction to Psychology (3-0-3)

This is an introductory survey of history and schools of thought in psychology, including topics such as intelligence, learning, motivation, and emotions. Prerequisite: None.

PSY-151 Applied Psychology for Law Enforcement (3-0-3)

This course draws heavily from the field of social psychology, and psychological concepts routinely applied in Criminal Justice. The primary subject areas discussed will be the psychology of conformity, communication, propaganda, persuasion, self-justification, aggression, prejudice, interview and confession, motivation, stress, neurosis, psychosis, personality disorders, sexual deviation, alcoholism and drug addiction. Prerequisites: PSY 101, PSY 203.

PSY-203 Abnormal Psychology (3-0-3)

This is a study of the major abnormal behavior patterns and way by which these aberrant patterns of thinking and acting are developed. Some attention is given to prevention of mental illness and the study of normal defense and escape mechanisms. Prerequisite: PSY 101.

PSY-206 Applied Psychology (3-0-3)

A study of the principles of psychology that will be of assistance in the understanding of interpersonal relations on the job. Motivation, feelings and emotions are considered with particular reference to on-the-job problems. Other topics investigated are employee selection, supervision, job satisfaction, and industrial conflicts. Attention is also given to personal and group dynamics so that the student may learn to apply the principles of mental hygiene to his adjustment problems as a worker and a member of the general community. Prerequisite: None.

PSY-1101 Human Relations (3-0-0-3)

A study of basic principles of human behavior. The problems of the individual are studied in relation, group membership, and relationships within the work situation. Prerequisite: None.

RAD-100 Introduction to Radiology (3-0-3)

This course is designed to provide the student with a knowledge of basic positioning in conjunction with protection, radiologic terminology, history of the profession and ethics. Basic office procedures as they are directly related to the Radiology Department will also be included. Prerequisite: None.

RAD-102 Radiographic Technique I (4-0-4)

This course is designed to teach the beginning radiologic technology student the fundamentals of exposure and darkroom. Conditions necessary for x-ray production, fundamental factors in the production of a radiograph and qualities of a radiograph with emphasis being directed toward the controlling factors of the qualities will be covered. Darkroom principles will include darkroom construction, processing methods: manual and automatic, chemical properties of the developer and fixer, film construction, current media for holding x-ray film. Prerequisite: None.

***RAD-106 Clinical Technique I (0-12-4)**

Students are exposed to the patient, the various machines and other radiographic accessories. The importance of shielding all patients is stressed. Students learn to do routine examinations limited to chest and extremity work. Prerequisite: None.

RAD-111 Positioning I (2-0-2)

In Positioning I, the axial skeleton will be studied.

RAD-112 Radiographic Technique II (2-0-2)

This course is a continuation of RAD 102 and includes a general discussion of secondary radiation, its causes and methods of elimination. The Inverse Square Law will be discussed with the intent to have the students thoroughly understand this Law and the relationship it has on maintaining radiographic density. Prerequisite: RAD 102.

***RAD-114 Clinical Technique II (1-24-9)**

This is a continuation of RAD 106. As the students observe a greater variety of examinations, they are permitted to do these under the supervision of a staff technologist. Beginning with RAD 114, a weekly film critique class will be held. Film critique is a course designed to critically evaluate the examinations (gross anatomy, positioning, technique that the students have done by themselves during their clinical rotation). Film critique classes will be held each quarter in conjunction with Clinical Technique. Prerequisite: RAD 106.

RAD-121 Positioning II (2-0-2)

This will be a continuation of RAD 111. Special emphasis will be placed on the vertebral column and tomography. Prerequisite: RAD 111.

RAD-124 Clinical Technique III (1-24-9)

As the students increase their knowledge of routine procedures, they will improve upon what they have learned and the variety of examinations that they are permitted to do alone will increase. A weekly film critique class will be held in conjunction with RAD 124. Prerequisite: RAD 114.

RAD-131 Positioning III (2-0-2)

This will be a continuation of RAD 121. In addition to learning routine skull views, emphasis will be to teach the student to do views of the visceral cranium. Prerequisite: RAD 121.

***RAD-134 Clinical Technique IV (1-24-9)**

Students are encouraged to conduct the more difficult examinations. Emphasis is placed on all types of skull examinations. A weekly film critique class will be held in conjunction with RAD 134. Prerequisite: RAD 124.

RAD-135 Radiological Anatomy I (2-0-2)

Radiological Anatomy is a course designed to acquaint the beginning student in Radiologic Technology with the entire skeletal system. This quarter will cover the Appendicular Skeleton.

RAD-136 Radiological Anatomy II (3-0-3)

This course is a continuation of RAD 135. The axial skeleton will be covered this quarter with emphasis on the skull and visceral cranium. Topographic anatomy, a study of body surface landmarks which aid in externally locating internal structures will also be included. Prerequisite: RAD 135.

RAD-201 Positioning IV (2-0-2)

All views of the visceral cranium not completed during RAD 121 will be finished at the beginning of this quarter. Emphasis will be to teach the student methods of doing special views of the skull. Prerequisite: RAD 131.

***RAD-203 Clinical Technique V (1-24-9)**

Students are assigned to specialty areas: Therapy, Nuclear Medicine and Special Procedures where the students learn to operate injectors, rapid cassette changers, Cobalt Unit and Scanners, in addition to doing radiographic examinations applicable to a specific area. A weekly film critique class will be held in conjunction with RAD 203. Prerequisite: RAD 134.

RAD-205 Medical Use of Radioisotopes (2-0-2)

For the student to have a well rounded training in Radiological Technology, some training in Nuclear Medicine becomes essential. Students taking this course review Radiation Physics and Radiation Safety. Prerequisite: None.

RAD-210 Positioning V (2-0-2)

This course will acquaint the student with routine examinations using an opaque media. Emphasis will be placed on examinations involving the thoracic cavity, abdomen and the female reproductive system. Prerequisite: RAD 201.

***RAD-212 Clinical Technique VI (1-24-9)**

Students are permitted to do examinations alone during this quarter. Staff technologists are required to observe. A weekly film critique class will be held in conjunction with RAD 212. Prerequisite: RAD 203.

RAD-213 Advanced Radiographic Technique I (3-0-3)

This first half of this quarter will be devoted to a general review of radiographic exposure. This review will cover all of the courses of previous training. At the end of the quarter, the students will be given a comprehensive examination that will cover all phases of Radiologic Technology. Prerequisite: RAD 112.

RAD-214 Equipment and Maintenance (2-0-2)

This course familiarizes the student with the component circuits of an x-ray unit to permit detection and correction of simple difficulties which interfere with or prevent the proper function of the equipment or expensive breakdown. Prerequisite: PHY 105.

RAD-215 A Survey of Medical and Surgical Diseases (2-0-2)

This course acquaints the student with certain changes that occur in disease and injury and their application to Radiologic Technology. Prerequisite: None.

RAD-221 Positioning VI—Opaque Media—Special Procedures (2-0-2)

This course will teach the students two aspects of positioning: special procedures and opaque/contrast materials indicated for the various examinations. Students will also learn the basic types of contrast materials and the composition of each. Prerequisite: RAD 210.

***RAD-223 Clinical Technique VII (1-24-9)**

Students are assigned increased responsibility in organizing the daily function of their assigned room, in addition to doing patient examinations. The weekly film critique class will be held to evaluate the dual responsibility of the student. Prerequisite: RAD 212.

RAD-225 Principles of Radiation Protection and Radiobiology (2-0-2)

This course is designed to teach the student the biological effects (somatic and genetic) that result from the interaction of ionizing radiation and matter. Also included in the course will be the National Council on Radiation Protection standards for the patient, the general public and radiological personnel. Prerequisite: None.

RAD-231 Positioning VII—Comprehensive Review (2-0-2)

This course will provide for the student a general view that will cover the preceding seven (7) quarters of positioning. A comprehensive examination, covering the three (3) volumes of the positioning book will be given at the end of this quarter. Prerequisite: RAD 221.

***RAD-233 Clinical Technique VIII (1-24-9)**

Students are permitted to work in the area of Radiologic Technology that interests them the most. A weekly film critique class will be held in conjunction with RAD 233. Prerequisite: RAD 223.

SOC-201 Sociology (3-0-3)

A course designed to create a knowledge and awareness of the problems in society today and to fit the students for involvement in those problems that affect their personal lives. Emphasis is on the nature, definition, and analysis of major social problems. While the primary stress is on the sociological point of view, information from other fields in the social sciences is incorporated. Prerequisite: None.

SSC-100 Shorthand Speed Building (1-2-2)

A speed development and theory review course for learners who have already mastered Gregg or other shorthand theory but who need to maintain speeds at various speed building levels.

SSC-101 Basic Typewriting (2-3-3)

A competency-based introduction to typewriting fundamentals, (keyboard control and techniques), correspondence, and centering applications. Prerequisite: None.

SSC-102 Shorthand (3-2-4)

A beginning course in the theory and practice of reading and writing Gregg shorthand. Prerequisite: None.

SSC-103 Advanced Typewriting (2-3-3)

A concentrated effort to continue speed building while more strongly stressing accuracy and introducing correction skills. Production work continues on letters, manuscripts and reports, and form typing is introduced. Speed requirement: 32 wpm for five minutes. Prerequisite: SSC 101 or equivalent.

SSC-104 Shorthand (3-2-4)

Emphasis on dictation and speed building for Gregg shorthand. Prerequisites: SSC 102 or equivalent.

SSC-105 Expert Typewriting (2-3-3)

An emphasized development of sustained production on various types of typewriting problems and perfected learning of the mechanism, operation, and care of the typewriter. The speed-building emphasis continues with increased attention to accuracy. Speed requirement: 49 wam for five minutes. Prerequisite: SSC 103 or equivalent.

SSC-106 Shorthand (3-2-4)

Speed building and elementary transcription. Emphasis is on development of speed in dictation and accuracy in transcription. Speed requirement: 60 words a minute for three minutes. Prerequisites: SSC 101 and SSC 104, or equivalent; ENG 101, SSC 127.

SSC-107 Shorthand Refresher (3-2-4)

This course is designed as a shorthand dictation speed-building program for those who have previously studied shorthand theory. (No specific shorthand system is a prerequisite.) The speed requirement is determined by student need; terminal objectives are set by each individual. Takes must be transcribed at the typewriter; 95 percent accuracy is required with deductions for misspelled words, punctuation errors, and uncorrected typographical errors. Prerequisites: SSC 104 or equivalent; SSC 101 or 32 wam typing speed.

SSC-111 Information Processing Systems (1-3-2)

Instruction in the use of machines and systems for processing numerical and verbal business information. Special emphasis is placed on the practical operation of equipment, the analysis of cost factors, and information flow. Prerequisite: SSC 103.

SSC-112 Records Management (3-0-3)

A study of the practical application, systematic analysis, and scientific control of business records from their creation through processing, maintenance, protection, and final disposition; the study of manual and automated systems is included. Prerequisite: None.

SSC-113 Personal Development (3-0-3)

Designed to help the student recognize the importance of the physical, intellectual, social, and emotional dimensions of personality. Emphasis is placed on grooming and methods of personality improvement. Prerequisite: None.

***SSC-127 Business English (3-0-3)**

A course designed specifically for secretarial students. Emphasis is placed upon punctuation skill building, spelling, and transcription of self-written shorthand notes at the typewriter. Prerequisites: ENG 101, SSC 101, SSC 102. (For secretarial students only).

SSC-205 Professional Typewriting (2-3-3)

Job-performance competency is sought through attention to accuracy and correction techniques and integration of prior speed building and previously-learned English. It also includes composition skills related to production work from rough drafts and simulated dictation copy. Speed requirement: 60 words a minute for five minutes. Prerequisite: SSC 105 or equivalent.

SSC-206 Dictation and Transcription I (3-2-4)

Develops the skill of taking dictation and transcribing at the typewriter. Minimum dictation speed requirement: 80 wam for three minutes. Transcription rate: 15 wam on material dictated at 80 wam. Prerequisite: SSC 106.

***SSC-207 Secretarial Procedures & Administration I (3-2-4)**

Designed to acquaint the student with the responsibilities encountered by a secretary during the work day. These include the following: receptionist's duties, handling the mail, telephone techniques, travel information, telegrams, office records, purchasing of supplies, office organization and insurance claims. Prerequisites: SSC 111, SSC 112, SSC 205, and SSC 206.

SSC-208 Dictation and Transcription II (3-2-4)

The student develops accuracy, speed and a vocabulary that will meet the secretarial requirements of business and professional offices. Minimum dictation speed requirement: 100 wam for three minutes. Transcription rate: 20 wam on material dictated at 100 wam. Prerequisite: SSC 206.

***SSC-209 Secretarial Procedures & Administration II (3-2-4)**

A continuation of the work encountered in the first course. Emphasis is placed on the student's work on individual problems and specialized work projects. Prerequisite: SSC 207.

SSC-210 Dictation and Transcription III (3-2-4)

Principally a speed building course, covering materials appropriate to the course of study, with emphasis on speed as well as accuracy. Minimum dictation speed requirement: 120 wam for three minutes. Transcription rate: 25 wam on material dictated at 100 wpm. Prerequisite: SSC 208.

SSC-215 Word Processing (2-3-3)

Preparation for use of word processing equipment in the office, including encounters with the resulting requirements for improved productivity, employment of written communication skills, and editing and proofreading. Information is processed on automated word processing equipment using a full range of equipment function capabilities. Prerequisite: SSC 103 or measured typing skill of 32 wam within four errors for five minutes.

SSC-271 Administrative Services Management (3-0-3)

Emphasis is on building good human relationships in management. The student will be involved in role playing, group consensus problem-solving sessions and case study analysis. Prerequisite: None.

SSC-272 Terminology (2-0-2)

Designed to increase the student's total number of words in both the active and passive vocabularies. Student may elect to devote some of the study to increasing awareness in medical and legal terminology.

***TDM-1201 Machine Processes (3-0-12-7)**

This course is designed to introduce the student to the tools, instruments, machines, and methods used in the tool and die shop. Basic die-making theory will be presented as it pertains to simple piercing, blanking, and bending dies. Each student will be subjected to a series of projects requiring extreme proficiency. Prerequisite: Machine Shop graduate or equivalent.

***TDM-1202 Machine Processes (3-0-12-7)**

This course is a study of certain individual parts that go into a die assembly. Students will go into detail concerning their making, assembly, functioning and properties necessary for satisfactory service. Continued project work will point out the requirements for precise work. Prerequisite: TDM 1201.

***TDM-1204 Machine Processes (3-0-12-7)**

This course is a continuation of TDM 1202 in which students will make a detailed study of die-block construction, strippers and stock guides, shedders and knock-outs, nest gages, and pushers. Project work has advanced to the finish grinding and assembly stage requiring high quality work from the student. Prerequisite: TDM 1202.

***TDM-1205 Fundamentals of Mold Construction (3-2-0-4)**

This course is a study of plastics in general and plastic terminology and subjects the student to the fundamental processes and basic construction of plastic molds (compression, transfer and injection), molds for die castings (pressure molding of non-ferrous alloys), and rubber molds. The student will operate compression and injection molding machines and study blueprints and component parts of the molds in these machines.

TDM-1206 Machine Processes*(3-0-12-7)**

A study of die stops completes the study of die components as presented in this course. Stock strip utilization and strip layout will be covered. Die sets and purchased parts will be discussed. A study of die assembly, set up practices, punch press operation, and a miscellaneous group of methods is necessary to complete this course. Prerequisite: TDM 1204.

TDM-1207 Special Problems and Molding*(3-4-0-5)**

This course is a continuation of TDM 1205 and will be used to subject the student to various operations within local industries. Numerous field trips will be scheduled to review operations of pressroom equipment, molding automatic assembly and the building and maintenance of that equipment. Assigned project work will better acquaint the student with dies, molds, jigs, fixtures and gaging. Prerequisite: TDM 1205.

WLD-1101 Basic Welding**(1-2-0-2)**

Welding demonstrations by the instructor and practice by students in the welding shop. Safe and correct methods of assembly and operating the welding equipment. Practice will be given for surface welding and flame cutting. Emphasis on electric arc and gas welding methods applicable to mechanical repair work. Bronze welding and silver soldering may also be covered.

WLD-1102 Basic Welding**(2-0-3-3)**

Welding demonstrations by the instructor and practice by students in the welding shop. Safe and correct methods of assembly and operating the welding equipment. Practice will be given for surface welding and flame cutting. Emphasis on electric arc and gas welding methods applicable to mechanical repair work. Bronze welding and silver soldering may also be covered.

WLD-1112 Mechanical Testing and Inspection**(1-3-0-2)**

The standard methods for mechanical testing of welds. The student is introduced to various types of tests and testing procedures and performs the details of the test which will give adequate information as to the quality of the weld. Types of tests to be covered are: bend, destructive, free-bond, guided-bend, nick-tear, notched-bend, tee-bend, non-destructive, V-notch, Charpy impact, etc. Prerequisites: WLD 1120, WLD 1121.

WLD-1120 Oxyacetylene Welding and Cutting**(3-0-12-7)**

Introduction to the history of oxyacetylene welding, the principles of welding and cutting, nomenclature of the equipment, assembly of units. Welding procedures such as practice of puddling and carrying the puddle, running flat beads, butts welding in the flat, vertical and overhead position, brazing, hard and soft soldering. Safety procedures are stressed throughout the program of instruction in the use of tools and equipment. Students perform mechanical testing and inspection to determine quality of the welds. Prerequisite: None.

WLD-1121 ARC Welding**(3-0-12-7)**

The operation of AC transformers and DC motor generator arc welding sets. Studies are made of welding heats, polarities, and electrodes for use in joining various metal alloys by the arc welding process. After the student is capable of running beads, butt and fillet welds in all positions are made and tested in order that the student may detect his weaknesses in welding. Safety procedures are emphasized throughout the course in the use of tools and equipment. Prerequisite: None.

WLD-1122 Commercial and Industrial Practices**(3-0-9-6)**

Designed to build skills through practices in simulated industrial processes and techniques: sketching and laying out on paper the size and shape description, listing the procedure steps necessary to build the product, and then actually following these directions to build the product. Emphasis is placed on maintenance, repairing worn or broken parts by special welding applications, field welding and nondestructive tests and inspection. Prerequisites: WLD 1120, WLD 1121.

WLD-1123 Inert Gas Welding**(1-0-3-2)**

Introduction and practical operations in the use of inert-gas-shield arc welding. A study will be made of the equipment, operation, safety and practice in the various positions. A thorough study of such topics as: principles of operations, shielding gases, filled rods, process variations and applications manual and automatic welding. Prerequisites: WLD 1120, WLD 1121.

WLD-1124 Pipe Welding**(3-0-12-7)**

Designed to provide practice in the welding of pressure piping in the horizontal, vertical, and horizontal fixed position using shield metal arc welding processes according to Sections VIII and IX of the ASME code. Prerequisite: WLD 1121.

WLD-1125 Certification Practices**(3-0-6-5)**

This course involves practice in welding the various materials to meet certification standards. The student uses various tests including the guided bend and the tensile strength tests to check the quality of his work. Emphasis is placed on attaining skill in producing quality welds. Prerequisites: WLD 1120, WLD 1121, WLD 1123, WLD 1124.

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- Burney Hay Gardner Instructor, Human Resources Development
B.S., Auburn University; M.A., Columbia Theological Seminary
- Elizabeth R. Heaton ... Coordinator/Job Developer, Human Resources Development
A.S., Roane State Community College; B.S.W., East Tennessee State University
- Virginia C. Kirkland Certification-Outreach, Human Resources Development
Blanton's Business College
- Kathryn A. Lemieux Secretary
A.A.S., Asheville-Buncombe Technical College
- Marilyn P. Little Instructor, Human Resources Development
B.A., Warren Wilson College
- Renee Reich Instructor, Human Resources Development
B.S., Saint Francis College, PA
- Jean C. Robbins Director, Academic Continuing Education
B.A., Mars Hill College; M.A., University of Louisville; Wake Forest University
- Gaylen K. Saunders Secretary
Cecil's Junior College
- Ray E. Sawyer Director, Continuing Education
B.S., Newberry College
- Juanita R. Sluder Secretary
Cecil's Business College; L.O.M.A. Management Institute
- Lowell Smith Dean, Continuing Education
B.S., Mathematics; M.A.Ed., Western Carolina University; Georgia Institute of Technology
- Rhonda P. West Secretary
A.A.S., Asheville-Buncombe Technical College
- Eileen Williams Secretary

OFFICE OF STUDENT SERVICES

- John W. Davis Vice President, Student Services
B.S., Florida State University; M.A.Ed., Western Carolina University; University of Florida; North Carolina State University; California State College, LA
- Mary S. Carpenter Counselor
B.A., Elon College; M.A.Ed., Western Carolina University; University of Indiana; University of North Carolina at Greensboro
- James Z. Drummond Counselor
B.S.I.T., Pittsburg State University; Kansas University; UNC-A; Western Carolina University
- A. Thomas Hansen Director of Counseling
B.A., M.A.Ed., Western Carolina University
- Paul Hensley Veterans Service Officer
A.A.S., Asheville-Buncombe Technical College; B.S., Western Carolina University

- Margie O. Hill Secretary
Blanton’s Business College
- Frances N. Johnson Registrar
A.A.S., Asheville-Buncombe Technical College; B.A., University of North Carolina at Asheville; M.A.Ed., Appalachian State University
- Ellen M. ReedData Entry Operator/Secretary
Asheville-Buncombe Technical College
- Sherry L. Rhodarmer Secretary
A.A.S., Asheville-Buncombe Technical College
- Connie B. RiceDirector of Admissions
A.A.S., Asheville-Buncombe Technical College; B.S., B.A., Western Carolina University
- Susan Scholten Lemley Job Developer
B.S., Michigan State University. On assignment from the NC Employment Security Commission.

OFFICE OF ADMINISTRATIVE SERVICES

- K. Ray Bailey Vice President, Administrative Services
B.S., Middle Tennessee State University; M.A.Ed., Western Carolina University; North Carolina State University; George Washington University; University of Nebraska at Omaha
- Glenn T. Anderson Director, Financial Aid
B.A., Youngstown State University; M.A.Ed., Wake Forest University
- Vicki P. Blalock Bookkeeper
B.S., Mars Hill College
- Alden B. Chrisawn Director, Business Services
A.A.S., Asheville-Buncombe Technical College; B.S., Mars Hill College
- Bruce E. ClyneChief Security Officer
A.A.S., Asheville-Buncombe Technical College
- Billie Dalton Secretary
- Katie C. DavisCoordinator, Learning Laboratory
B.S., Longwood College; Southern Baptist Theological Seminary; Mars Hill College; Western Carolina University
- Marie M. FarleyBookstore Clerk
- Bobby C. FreemanDirector, Building & Grounds
- Jessie P. Goforth Bookkeeper
Blanton’s Business College
- Carolyn C. Hadaway Purchasing Agent
- Maretta K. Hensley Library Technical Assistant
A.A.S., Asheville-Buncombe Technical College
- Peggy Kyle Librarian
B.A., Warren Wilson College; M.L.S., Appalachian State University; Montreat-Anderson College
- Iona McCurry Duplicating/Mail Clerk
- Ilka Bowditch McDowellAssociate Coordinator, Learning Laboratory
B.S., M.S., North Carolina A&T State University; Appalachian State University
- Shirley B. McLaughlin Director, Learning Resources Center
B.S.Ed., Western Carolina University; M.L.S.Ed.D., Appalachian State University; East Carolina University; Winthrop College
- Glenda W. Morrow Accounting Clerk
Technical Diploma, Asheville-Buncombe Technical College
- Garnet O. PaceAdministrative Programmer/Analyst
A.A.S., Asheville-Buncombe Technical College; B.S., B.A., Western Carolina University; UNIVAC Education Center
- Norma F. Pendleton Bookstore Manager
A.A.S., Asheville-Buncombe Technical College
- Marie T. Pinner Switchboard Operator
- Merion E. Presha Secretary
A.S., Kittrell Junior College
- Margaret A. Shope Accounting Clerk
Cecil’s Business College
- Kate H. Utter Coordinator, Audio-Visual Services
B.A., Educational Media, Appalachian State University
- Rebecca R. Watkins Accounting Clerk
A.A.S., Asheville-Buncombe Technical College

FACULTY

DIVISION OF BUSINESS EDUCATION

- Richard M. White (1965)** Acting Director, Division of Business Education
B.S., Business Administration; M.A.Ed., Western Carolina University
- Joseph W. Franklin (1980)** Chairperson, Electronic Data Processing
B.S., Mars Hill College; M.A., Appalachian State University
- Albert A. Freeman (1966)** Instructor, Business Administration
B.S.Ed., Appalachian State University; M.A.Ed., Western Carolina University
- Sallie P. Graves (1974)** Instructor, Office Education
B.S., Business Education; Barber-Scotia College; M.A.Ed., Western Carolina University
- James A. Hagan (1974)** Instructor, Business Administration
B.S., M.A., Appalachian State University; Licensed Real Estate Broker
- Max V. Hutchins (1973)** Chairperson, Office Education
B.S. Business & Economic Education, M.A., Business, Economic, & Occupational Education, Appalachian State University; C.A.G.S. Vocational & Technical Education, Virginia Polytechnic Institute & State University; Western Carolina University; North Carolina State University
- Carol Y. Mull (1983)** Instructor, Business Education Division
A.B., Lenoir Rhyne College; M.A., Appalachian State University
- Jaimie E. Mulvey (1982)** Instructor, Electronic Data Processing
B.S., N.C. State University; A.A.S., Asheville-Buncombe Technical College; Johns Hopkins Medical School; Western Reserve Medical School
- D. Harold Ponder (1974)** Instructor, Business Administration
A.A., B.S., Mars Hill College; M.A. Ed., Ed. S., Western Carolina University; M.T.M., H.B. Maynard; Time Study, Henderson, Lindsay and Michaels; University of Tennessee
- Ronald B. Sluder (1965)** Instructor, Business Administration
B.S., M.B.A., Western Carolina University
- Barbara L. Smith (1980)** Instructor, Office Education
B.S., Secretarial Administration, University of North Carolina-Greensboro; B.S. Ed., Western Carolina University; M.A. Ed., Western Carolina University and George Peabody College
- Kathy S. Toler (1983)** Instructor, Business Education
B.A., M.A.T., University of South Carolina
- Sherman W. Young, Jr., C.P.A. (1981)** Instructor, Business Administration
B.S., Business Administration, M.A., Education, Western Carolina University; Graduate, Southeastern Trust School

DIVISION OF ENGINEERING TECHNOLOGY

- Richard D. Croom, P.E., R.L.S. (1966)** ... Director, Division of Engineering Technology
B.S.C.E., North Carolina State University; Bowling Green State University
- Maynard E. Bennett (1978)** Instructor, Electronics Technology
A.A.S., Asheville-Buncombe Technical College; B.T., Appalachian State University
- William A. Dickinson (1969)** Chairperson, Mechanical Engineering Technology
A.B. Engineering, Stanford University
- Kenneth W. Driver (1970)** Chairperson, Civil Engineering Technology
B.S.C.E.C. (Construction Option), North Carolina State University
- William P. Fisher (1971)** Chairperson, Electronics Technology
B.S.E.E., University of Tennessee
- R. Michael Holcombe (1968)** Chairperson, Drafting and Design Technology
B.S., Industrial Management, Georgia Institute of Technology; Licensed Real Estate Broker
- Paul E. Keicher (1970)** Instructor, Drafting and Design Technology
B.Ch.E., Syracuse University
- Carolyn H. May (1970)** Instructor, Chemical Engineering Technology
A.B. Chemistry, University of North Carolina at Greensboro; National Science Foundation Institute
- Robert E. Morrell (1968)** Chairperson, Chemical Engineering Technology
B.S. Ed., University of North Carolina at Chapel Hill; National Science Foundation Institute; Western Carolina University; University of North Carolina at Asheville

DIVISION OF GENERAL EDUCATION

- Thomas E. Gaffigan (1965)** Director, Division of General Education
B.S. Mathematics, M.A. Ed., Western Carolina University
- Rex B. Blakeney (1966)** Instructor, Electricity
University of North Carolina at Asheville; Western Carolina University; Licensed Electrical Contractor
- Dennis J. Bressert (1981)** Instructor, Criminal Justice
A.A., Los Angeles Valley College; B.A. Public Administration Management, University of Redlands
- William L. Collins (1972)** Chairperson, Guided Studies
B.S. Psychology, M.S. Organizational Psychology, University of Tennessee; Licensed Psychological Associate;
Ed. S., Western Carolina University
- W. Michael Gray (1981)** Instructor, Biology
B.A., M.S., Appalachian State University
- Jo Marguerite Graybeal (1972)** Instructor, English and Social Studies
A.B. English, M.A. English, Baylor University; Ed.S., Western Carolina University
- Hamilton H. Gregory (1979)** Instructor, English and Social Studies
B.A., University of Tennessee at Chattanooga; M.Ed., University of Texas at El Paso
- Celia H. Miles (1971)** Chairperson, English and Social Studies
B.A., Berea College; M.A., University of North Carolina at Chapel Hill; Ph.D., Indiana University of Pennsylvania
- Faye P. Muse (1973)** Instructor, Mathematics
B.A. Mathematics, University of North Carolina at Asheville; M.A. Education, Western Carolina University
- Joyce J. Parris (1973)** Instructor, English and Social Studies
A.B., University of Georgia; M.A. Ed., Western Carolina University
- Ellen Honts Price (1973)** Instructor, English and Social Studies
B.A. Sociology, Westhampton College of the University of Richmond; M.A.Ed., Western Carolina University
- James H. Rhea (1965)** Chairperson, Physical Education;
Instructor, Drafting and Design Technology
B.S. Ed., North Carolina State University; M.A. Ed., Western Carolina University
- Toby R. Shook (1966)** Chairperson, Mathematics
B.A., Berea College; Western Carolina University
- Bernard C. Smith (1969)** Chairperson, Science
B.S., Clemson University; M.A. Ed., University of North Carolina at Chapel Hill
- Roy James Tweed, Jr. (1980)** Instructor, Mathematics
B.S. Mathematics, Mars Hill College; M.A. Mathematics, Louisiana State University
- David L. Warren (1978)** Chairperson, Criminal Justice
A.A. Police Science, Davidson County Community College; B.A. Criminal Justice, Pfeiffer College; M.A.,
Criminal Justice Education, University of South Carolina
- Maxie B. Welch (1968)** Instructor, English and Social Studies
B.S., East Carolina University; M.A. Ed., University of Virginia
- Laurie S. Wilkie (1979)** Instructor, Mathematics and Physics
B.S. Physics, University of North Carolina at Wilmington

DIVISION OF ALLIED HEALTH EDUCATION

- David F. Wolfe (1968)** Director, Division of Allied Health Education
B.S. Ed., M.A. Ed., Western Carolina University
- Dorothy S. Aycock, R.N. (1970)** Instructor, Nursing
B.S., Nursing, Berea College; M.Ed., University of North Carolina at Chapel Hill
- Metta Buckner, R.N. (1971)** Instructor, Nursing
Memorial Mission Hospital School of Nursing; B.S., Mars Hill College
- Brenda Causey, R.N. (1976)** Instructor, Nursing
Memorial Mission Hospital School of Nursing; B.S., Nursing, Western Carolina University
- David Constantinos, D.D.S. (1982)** Chairperson, Dental Auxiliary Programs
B.A., American International College; D.D.S., University of Maryland
- Doris K. Cunningham, C.D.A. (1972)** Instructor, Dental Auxiliary Programs
University of North Carolina at Chapel Hill; B.S., Western Carolina University
- Kathryn P. Daughton, R.N. (1970)** Chairperson, Department of Nursing
B.S. Nursing, College of Mount St. Vincent; M.A. Ed., Western Carolina University
- Henry B. Dawkins, R.T. (1971)** Chairperson, Radiologic Technology
Memorial Mission Hospital School of Radiologic Technology; B.S., X-Ray Technology, Mars Hill College
- Maxine Deweese, R.T. (1973)** Instructor, Radiologic Technology

- Ann C. Evans, C.D.A. (1972)Instructor, Dental Auxiliary Programs
University of North Carolina at Chapel Hill
- Ned H. Fowler, EMT-P (1983) Instructor, Emergency Medical Science
A.A.S., B.A., Accounting, Asheville-Buncombe Technical College
- Mary Elizabeth Haney, R.N. (1981) Instructor, Nursing
B.S. Nursing, St. Mary's College at Notre Dame, Indiana; M.A. Ed., Western Carolina University
- Jo Ann Holderman, R.N. (1968) Instructor, Nursing
Memorial Mission Hospital School of Nursing; Asheville-Biltmore College; Western Carolina University
- Betsy Fridl Krickhan, R.N. (1974) Instructor, Nursing
B.S. Nursing, Marquette University College of Nursing
- Patricia Patton, M.T. (1978) Instructor, Medical Laboratory Technology
B.S., Medical Technology, University of North Carolina at Chapel Hill
- Clinton M. Queen, R.N. (1982) Chairperson, Emergency Medical Science
A.A.S. Nursing, A.A.S. Emergency Medical Science, Asheville-Buncombe Technical College
- Joyce Robertson, R.N. (1967) Instructor, Nursing
B.S. Nursing, Berea College
- Eilleen F. Rowe, R.N. (1975) Instructor, Nursing
Georgia Baptist School of Nursing; B.S., Mars Hill College
- Bonnie Saylor, R.N. (1976) Instructor, Nursing
B.S. Nursing, Columbia Union College; M.P.H., Loma Linda University
- Sherry Morrow Shields, R.D.H. (1973)Instructor, Dental Auxiliary Programs
Central Piedmont Community College; B.S., University of North Carolina at Chapel Hill
- M. Jean Stines, R.D.H. (1972)Instructor, Dental Auxiliary Programs
University of Tennessee; B.S., Mars Hill College
- Shaun Riley Tate, R.D.H. (1978)Instructor, Dental Auxiliary Programs
Wake Forest University; B.S., East Tennessee State University; M.A. Ed., Western Carolina University
- Laura S. West, M.T. (1970) Chairperson, Medical Laboratory Technology
B.S., Medical Technology, Western Carolina University

DIVISION OF HOSPITALITY EDUCATION

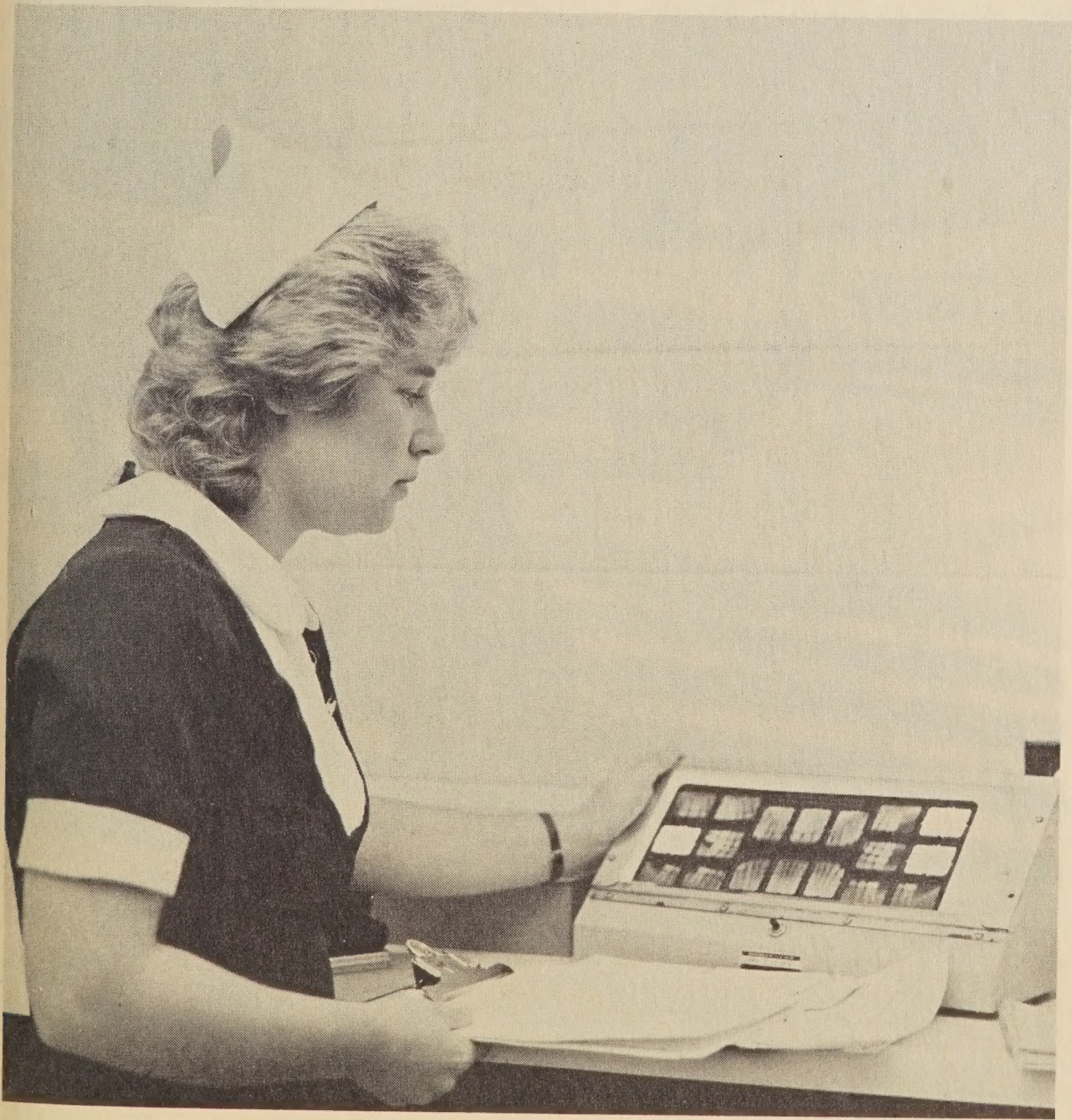
- Frederick Johnsson (1968) Director, Division of Hospitality Education
B.S., Florida State University
- Jordan L. Maynard (1979) Instructor, Hotel and Restaurant Management
B.S. Business Administration, Stetson University
- Jeff P. Myron (1975) Chairperson, Hotel and Restaurant Management
A.A.S., Asheville-Buncombe Technical College; B.T. Hotel and Restaurant Administration, Appalachian State University
- Robert G. Werth, C.E.C., C.C.E., Chef De Cuisine (1968)Chairperson, Culinary Technology
Apprenticeship, Hilton Hotels; New York University; Fellow to the American Academy of Chefs

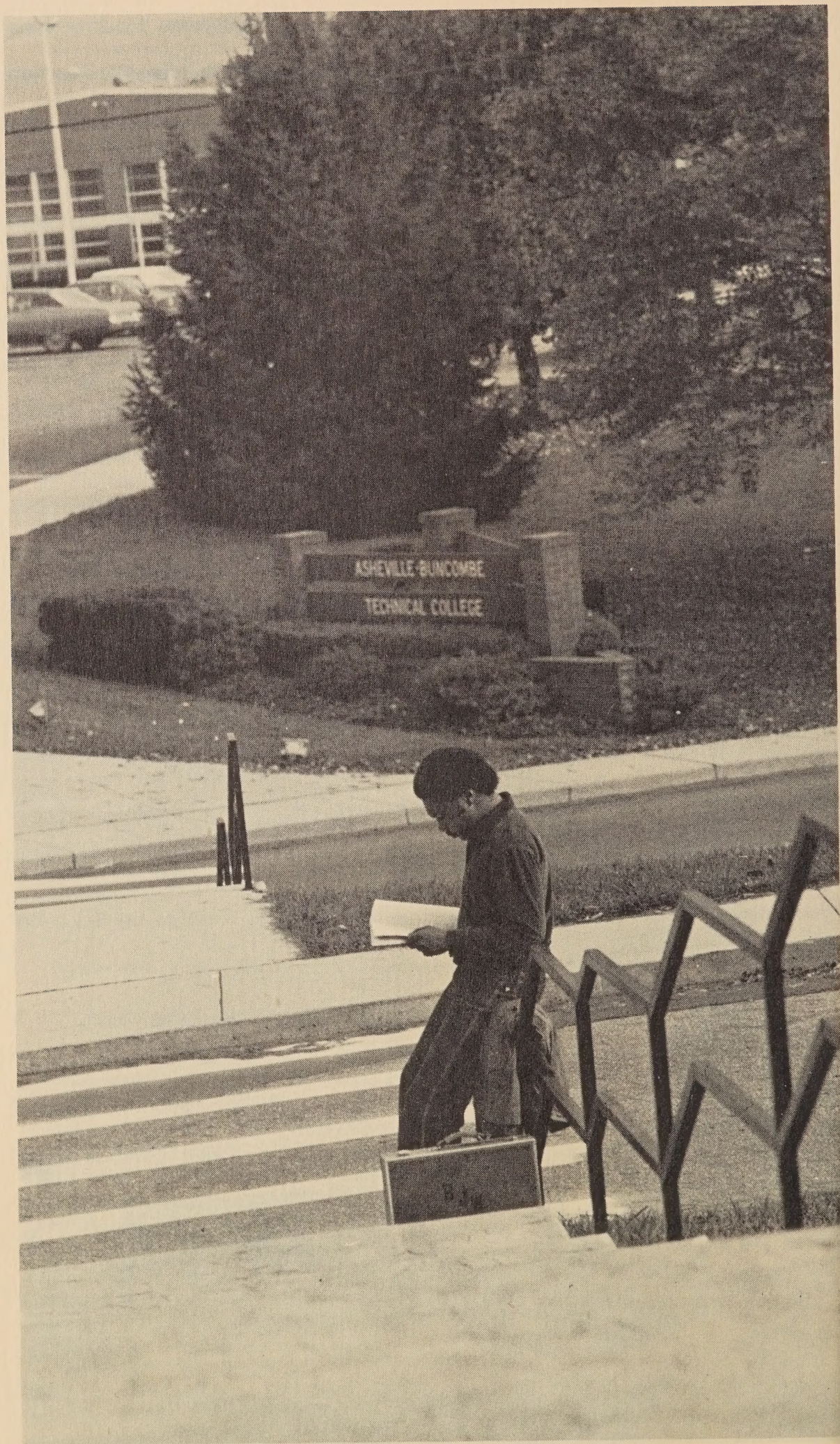
DIVISION OF VOCATIONAL-INDUSTRIAL EDUCATION

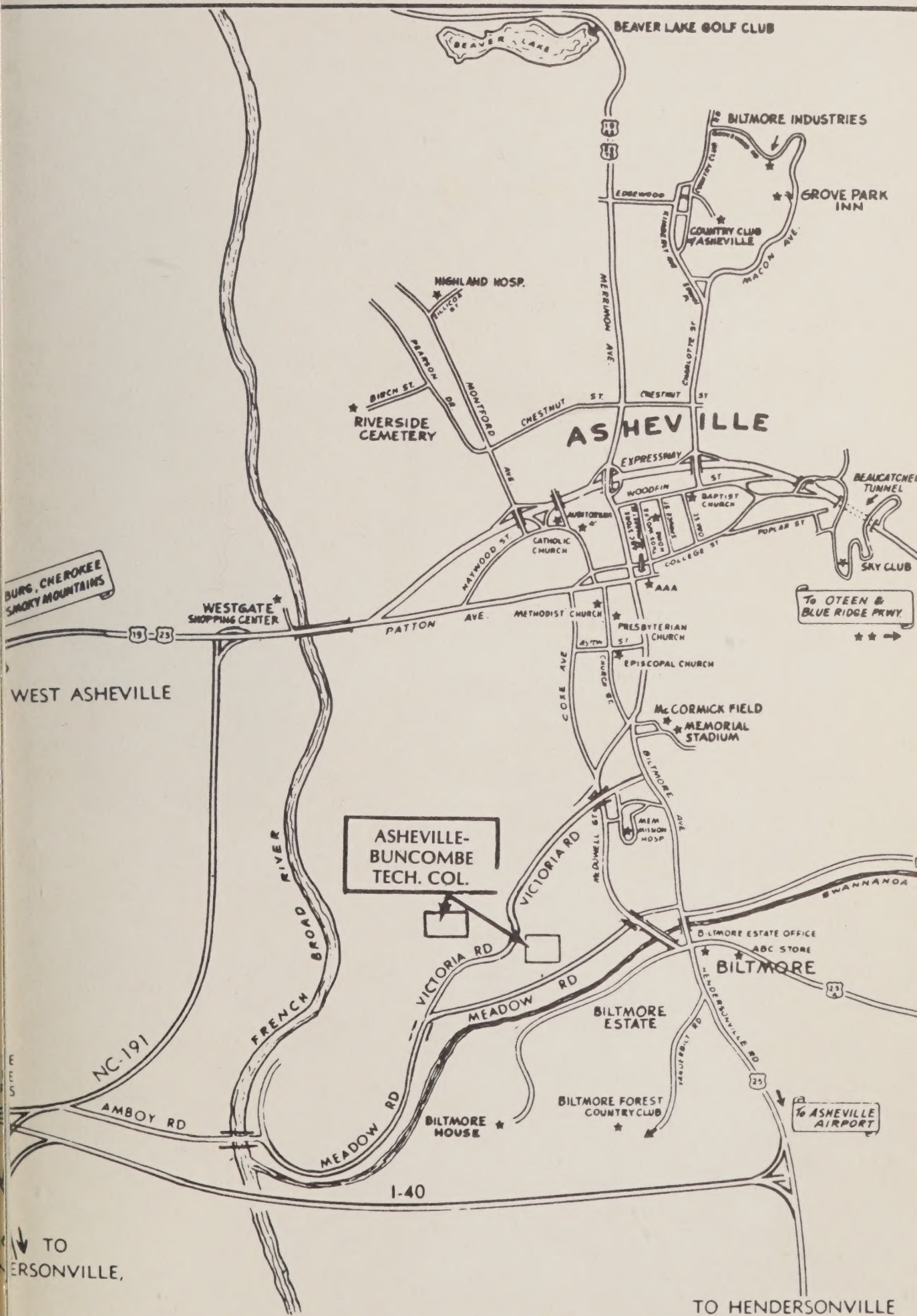
- Stans C. Sluder (1961) Director, Division of Vocational-Industrial Education
Blanton's Business College; Hobart Welding School; North Carolina State University
- Clarence F. Allison, Jr. (1978)Chairperson, Tool and Die Making
Asheville-Buncombe Technical College; Square D Tool and Die Apprenticeship
- Nolan B. Darnell (1978) Instructor, Building Construction
B.S., Industrial Arts, Southern Missionary College
- W.J. Davis (1966) Instructor, Machine Shop
A.A.S., Asheville-Buncombe Technical College; B.S. Industrial Technology, Western Carolina University
- Billy W. Haney (1974) Instructor, Automotive Mechanics
Asheville-Buncombe Technical College; Chrysler Motors Training Center
- Robert H. Israel (1962) Chairperson, Diesel Engines and Hydraulic Systems
General Motors Diesel Technical School; North Carolina State University
- Charles F. Noblitt (1961) Chairperson, Automotive Mechanics
North Carolina State University
- Robert L. Parker (1964) Chairperson, Air Conditioning and Refrigeration
Chicago Technical College; North Carolina State University; Licensed Refrigeration Contractor

Robert Swan (1962) Chairperson, Machine Shop
North Carolina State University

Leslie F. Walker (1977) Chairperson, Building Construction
Southern Missionary College, N.C. Licensed Building Contractor







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BILTMORE INDUSTRIES

GROVE PARK INN

COUNTRY CLUB
ASHEVILLE

HIGHLAND HOSP.

RIVERSIDE
CEMETERY

ASHEVILLE

EXPRESSWAY

WOODFIN ST

BAPTIST CHURCH

DECATUR TUNNEL

SKY CLUB

TO OTEEN &
BLUE RIDGE PKWY.

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SMOKEY MOUNTAINS

WESTGATE
SHOPPING CENTER

19-23

PATTON AVE.

METHODIST CHURCH

PRESBYTERIAN CHURCH

EPISCOPAL CHURCH

Mc CORMICK FIELD
MEMORIAL STADIUM

ASHEVILLE-
BUNCOMBE
TECH. COL.

VICTORIA RD

MEADOW RD

BILTMORE

BILTMORE ESTATE

BILTMORE HOUSE

BILTMORE FOREST COUNTRY CLUB

BILTMORE ESTATE OFFICE

ABC STORE

BILTMORE

SENDERVILLE RD

TO ASHEVILLE AIRPORT

TO HENDERSONVILLE

TO PERSONVILLE

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